

APPENDIX 1 – GAP ANALYSIS TABLES

Focus on Flood Disaster Management using Sendai Framework for Disaster Risk Reduction 2015-2030

Priority 1: Understanding disaster risk

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.

Goal	Current Achievement	Gaps	Causes	Solutions
1. To promote the collection, analysis, management and use of relevant data and practical information and ensure its dissemination, taking into account the needs of different categories of users, as appropriate;	The National IWRM Information Repository System has been established and launched officially in 2012.	Currently the National IWRM Information Repository System is not used widely by general public, mostly only by water engineers	Although the website is launched, the general public is still unaware if it.	Greater publicity and also training on application for flood and drought forecasting is important. Academia, scientific and research entities can be encouraged to be more involved in studying and focussing on the disaster risk factors and different scenarios, at national and local level in order to support action by relevant agencies, local authorities and communities.
2. To encourage the use of and strengthening of baselines and periodically assess disaster risks, vulnerability, capacity, exposure, hazard characteristics and their possible sequential effects at the relevant social and spatial scale on ecosystems, in line with national circumstances;	There are 189 river basins throughout Malaysia, 89 of them prone to become recurrent flooding. At present more than 26 river basin studies have been conducted including recommendations on implementation.	Not all are in implementation since the issues cover inter-institutional authorities and participation of all public stakeholders. An appropriate institutional framework, a clear policy and strategic and effective implementation of plans are required to alleviate some of the current difficulties. Not all river reserve areas have been gazetted as such under the law.	Lack of sufficient financial, institutional and human resources to implement, as well as political will. Low participation from NGOs and local communities is another main problem. Intrusion into, and loss of, river reserve areas which act as flood buffer zones. Other issues identified are: i) Lack of legal requirement, ii) Low level of awareness among decision makers, iii) Political interference.	Effective management of water resources requires full participation from the various stakeholders and a holistic approach. This needs to include awareness building at both the political and community level, as well as institutional and legislative strengthening. Academia, scientific and research entities to be involved in the analysis of previous flood occurrence data.
3. To develop, periodically update and disseminate, as appropriate, location-based disaster risk information,	During the Tenth Malaysia Plan (2011–2015), 194 flood mitigation projects were implemented and 34 local scale	Detailed information on historical flood areas and potential flood risk areas are not normally disseminated to the	No formal policy on public dissemination of historical or forecast flood information as this may have security and landuse	Develop policy and implementation approach for public dissemination of historical and/or forecast flood areas.

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including risk maps, to decision makers, the general public and communities at risk of exposure to disaster in an appropriate format by using, as applicable, geospatial information technology;	flood hazard maps were developed to facilitate disaster prevention implementation. In the 11th Malaysia Plan (2016-2020), DID has committed to carry out another six more Flood Hazard Maps at river basin level. Flood prone area map developed by the DID only give general indication of the areas at risk in large scale. More detailed flood risk maps are developed primarily for internal planning purposes. Climate change impact on rainfall and river discharge have been modeled by NAHRIM.	general public. Forecast flood risk map do not fully incorporate climate change impacts. Model results by NAHRIM are in the form of technical reports not generally accessible or understood by the public.	planning implications. Socio-political ramifications of historical information not fully understood and may be sensitive in relation to land use and land ownership. Historical flood maps are not necessarily indicative of future floods due to flood mitigation measures which have been taken and changing land uses.	
4. To systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts, as appropriate, in the context of event-specific hazard-exposure and vulnerability information;	Seasonal monsoon floods have resulted in an average annual direct loss amounting to RM915 million. However, in 2014, the extreme floods resulted in damage to public infrastructure amounting to RM2.9 billion. Estimates of financial losses are mainly focused on losses due to impact on national and government infrastructure. Government provides some aid to flood victims and rehabilitation projects are implemented.	Individual, personal, victim losses are not recorded. The full cost of rehabilitation projects to assist flood victims to relocate is not generally known.	No national level survey or database on individual victim losses. In many cases non-victims claim losses in order to obtain government aid complicating any assessment. Rehabilitation projects are often carried out together with or under community or rural development budgets.	Develop a methodology to obtain reliable data on flood victim losses and losses to public infrastructure.
5. To make non-sensitive hazard-exposure, vulnerability, risk, disaster and loss-disaggregated information freely available and accessible, as appropriate;	Academic and technical studies conducted on flood impacts. DID has developed flood hazard map as a step for formulation and evaluation of effective implementation of either structural or non-structural flood mitigation measures	Results of studies, maps, not generally disseminated to general public or only in a summary form.	No formal policy on identifying non-sensitive data and information which can be shared with the general public. Fear of misuse, misinterpretation or politicisation of the data and information by individuals and/or media.	Develop guidelines on what type of information may be made public.
6. To promote real time access to reliable data, make use of	There is a National Flood Forecasting and Warning System	The 18 month project began in December 2016 and the trial run	Previous warning systems were insufficiently maintained and	To evaluate the EASOS in operational mode.

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space and in situ information, including geographic information systems (GIS), and use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data;	(NaFFWS) set-up with website for the general public. Malaysia/UK collaboration project involving public-private partnership is focussed on developing an Earth and Sea Observation System (EASOS). The foundation of the work based on satellite enhanced flood modelling capability together with specialist teams of weather and flood forecasting experts. The 18 month project began in December 2016 and the trial run is expected to be completed by May 2018.	is expected to be completed by May 2018.	updated, vandalism of equipment at stations, complacency on part of community in response to flood warnings.	Academia, scientific and research entities to be involved in the evaluation of the system.
7. To build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning;	Awareness and training courses conducted by DID and NGOs. For example MyCWP with Global Environment Centre conducted 3 community level training at the end of 2016.	Intermittent awareness and training only in the period before expected natural floods occur during the Northeast monsoon season.	Lack of finance and human resources for conducting the training.	Advocate that Local Councils with NADMA, DID and other relevant agencies conduct regular training especially just prior to the seasonal flood periods. Special training of relief workers and repeated simulation exercises to refresh relief workers on protocols. Sharing of experiences by seasoned relief workers to provide support for those who are newly involved.
8. To promote and improve dialogue and cooperation among scientific and technological communities, other relevant stakeholders and policymakers in order to facilitate a science policy interface for effective decision-making in disaster risk management;	In 2015, the Malaysian Government allocated special funds to the Ministry of Higher Education for research projects focused on the extreme floods of 2014-2015. National level seminars were conducted in 2015 and 2016 on the findings of the projects. Recommendations on policy and strategies were made and submitted to the Ministry.	A summary report of the findings and recommendations has not yet been released to the general public.	The recommendations are expected to be under consideration at the Ministry and/or Cabinet level.	Conduct further forum to disseminate results of recommendations and decisions made by the relevant authorities. Academia, scientific and research entities to be involved in the policy development.
9. To ensure the use of traditional, indigenous and	In 2015, the Malaysian Government allocated special	A summary report of the findings and recommendations has not yet	The recommendations are expected to be under	Conduct further forum to discuss and disseminate results of

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local knowledge and practices, as appropriate, to complement scientific knowledge in disaster risk assessment and the development and implementation of policies, strategies, plans and programmes of specific sectors, with a cross-sectoral approach, which should be tailored to localities and to the context;	funds to the Ministry of Higher Education for research projects focused on the extreme floods of 2014-2015. National level seminars were conducted in 2015 and 2016 on the findings of the projects. One theme was on community knowledge on flood disaster. Recommendations on policy and strategies were made and submitted to the Ministry.	been released to the general public.	consideration at the Ministry and/or Cabinet level.	recommendations and decisions made by the relevant authorities, academia, scientific and research institutions. Incorporation of traditional, indigenous and local knowledge and practices in training on guidelines on development and implementation of Integrated River Basin Management recommendations; preparation of guidelines and design standards for climate change adaptation; resettlement of population; and community level flood proofing measures.
10. To strengthen technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models to assess disaster risks, vulnerabilities and exposure to all hazards;	Malaysian flood management is based on structural and technological measures to control floods. Non-structural measures uses the guidance document Urban Stormwater Management Manual (MSMA) which is mandatory.	Unpredictable floods, flash floods and extreme flood events still occur.	Changing hydro-meteorological changes due urbanisation and climate change has increased unpredictability of flood hazards, especially in urban areas. This has impacted on the current measures taken which are based on data of hydro-climate conditions which occurred over the past 50 years.	Allocate special budget and encourage research in flood disaster risk management.
11. To promote investments in innovation and technology development in long-term, multihazard and solution-driven research in disaster risk management to address gaps, obstacles, interdependencies and social, economic, educational and environmental challenges and disaster risks;	In 2015, the Malaysian Government allocated special funds to the Ministry of Higher Education for research projects focused on the extreme floods of 2014-2015. National level seminars were conducted in 2015 and 2016 on the findings of the projects. Recommendations on policy and strategies were made and submitted to the Ministry.	A summary report of the findings and recommendations has not yet been released to the general public.	The recommendations are expected to be under consideration at the Ministry and/or Cabinet level.	Conduct further forum to disseminate results of recommendations and decisions made by the relevant authorities. Encourage innovation by providing special funding for flood disaster relief projects.
12. To promote the incorporation of disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery and	In 2015, the Malaysian Government allocated special funds to the Ministry of Higher Education for research projects focused on the extreme floods of	A summary report of the findings and recommendations has not yet been released to the general public.	The recommendations are expected to be under consideration at the Ministry and/or Cabinet level.	Conduct further forum to disseminate results of recommendations and decisions made by the relevant authorities and encourage the incorporation

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rehabilitation, in formal and non-formal education, as well as in civic education at all levels, as well as in professional education and training;	2014-2015. National level seminars were conducted in 2015 and 2016 on the findings of the projects. Recommendations on policy and strategies were made and submitted to the Ministry.			of such information in the school, college, university curricula, as well as through non-formal education courses or training and the media.
13. To promote national strategies to strengthen public education and awareness in disaster risk reduction, including disaster risk information and knowledge, through campaigns, social media and community mobilization, taking into account specific audiences and their needs;	Department of Irrigation and Drainage (DID) has adopted the Integrated River Basin Management (IRBM) and the Integrated Flood Management (IFM) approaches for its flood management programmes.	Only limited media campaigns on IRBM and IFM to the general public.	Lack of budget and human resources to lead the campaign. DID do not have officers who have a media communications background as the department is considered as a technical department. All the officers must have an engineering degree.	Identify national strategies to strengthen public education and awareness in flood disaster risk reduction. Human resources background for the DID need to incorporate officers with different qualifications suitable to handle all processes relevant to flood response and disaster management.
14. To apply risk information in all its dimensions of vulnerability, capacity and exposure of persons, communities, countries and assets, as well as hazard characteristics, to develop and implement disaster risk reduction policies;	National Disaster Management System (NDMS) is able to support the disaster management at a federal level by providing information management that includes data analysis, historical data, activity monitoring and action status.	The System is not accessible by the general public.	The information is regarded as confidential and sensitive.	Identify which type of information would be useful for the general public and can be made available.
15. To enhance collaboration among people at the local level to disseminate disaster risk information through the involvement of community-based organizations and nongovernmental organizations.	In 2015, the Malaysian Government allocated special funds to the Ministry of Higher Education for research projects focused on the extreme floods of 2014-2015. National level seminars were conducted in 2015 and 2016 on the findings of the projects. Recommendations on policy and strategies were made and submitted to the Ministry.	A summary report of the findings and recommendations has not yet been released to the general public.	The recommendations are expected to be under consideration at the Ministry and/or Cabinet level.	Conduct further forum to disseminate results of recommendations and decisions made by the relevant authorities.

Priority 2: Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is of great importance for an effective and efficient management of disaster risk. Clear vision, plans, competence, guidance and coordination within and across sectors, as well as participation of relevant stakeholders, are needed. Strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery and rehabilitation is therefore necessary and fosters collaboration and partnership across mechanisms and institutions for the implementation of instruments relevant to disaster risk reduction and sustainable development.

Goal	Current Achievement	Gaps	Causes	Solutions
<p>1. To mainstream and integrate disaster risk reduction within and across all sectors and review and promote the coherence and further development, as appropriate, of national and local frameworks of laws, regulations and public policies, which, by defining roles and responsibilities, guide the public and private sectors in:</p> <ul style="list-style-type: none"> i. addressing disaster risk in publically owned, managed or regulated services and infrastructures; ii. promoting and providing incentives, as relevant, for actions by persons, households, communities and businesses; iii. enhancing relevant mechanisms and initiatives for disaster risk transparency, which may include financial incentives, public awareness-raising and training initiatives, reporting requirements and legal and administrative measures; and iv. putting in place coordination and 	<p>Since 1971 Malaysia has :</p> <ul style="list-style-type: none"> (a) established of the Permanent Flood Control Commission; (b) established flood disaster relief machinery; (c) carried out of river basin studies and preparation of drainage master plans for major towns; (d) implemented structural measures; (e) implemented non-structural measures; (f) set up of flood forecasting and warning systems; and (g) set up of a nation-wide network of hydrological and flood data collection stations. <p>Most of these responsibilities are carried out by the DID. Flood response is under the National Security Council (NSC). In 1997, Directive No. 20 was developed and this contains the Policy and Mechanism of the National Disaster Management and Relief under the National Security Council (NSC). This was updated in 2012. States have gazetted river reserves and river catchment areas in order to control land use development. After the extreme floods of 2014-2015, the government set up the National Disaster Management Agency</p>	<p>Flood disaster management was previously managed by the Disaster Management and Relief Committee (DMRC), with uniformed services and local council providing logistical support, and support in terms of data from the DID and Malaysian Meteorological Service (MMS). The main aim of this mechanism was for disaster response and reduction from the logistical and technical view. Issues arise in the distribution of disaster relief at improperly managed evacuation centres. This include the irregular, inadequate and slow assistance provided to victims by the agencies involved. Different management practices among agencies also may result in conflicts. Resettlement after floods should be evaluated in order to be implemented for future improvements.</p>	<p>Response is adequate for local flood events and also for normal flood season conditions. However, the mechanisms were tested severely in the recent unusual extreme flood events which affected several states at the end of 2014. The relief agency personnel have their resources thinly stretched among the simultaneous operations in different locations. Relief workers have not been fully trained in assisting in the psychological trauma faced by victims. Relief workers only intermittently undergo simulation exercise. Evacuation centres often are inspected only when they are likely or need to be used. Insufficient budget and human resources to maintain standards and quality required.</p>	<p>NADMA has to take a holistic approach and strengthen the disaster management mechanism. Liaise with NADMA on flood disaster management. Integrated planning and management; operations and maintenance of utilities and facilities need to be enhanced. Involvement of all parties in the flood disaster management mechanism. The Ministry of Natural Resources and Environment (NRE) together with State Water Resources Authorities (SWRA) is proposing to continue to gazette :</p> <ul style="list-style-type: none"> a) Designated flood protection zones; b) Protection of catchment areas including lakes and reservoirs; c) River reserves, buffer zones; d) Licensing arrangements; and e) Fines and penalties. <p>Develop cross-sector Financing Models as part of the Water-Energy-Food Nexus management and multi-use of existing and new infrastructure, in line with the National Blue Ocean Strategy.</p>

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organizational structures	(NADMA), in December 2015, to coordinate government agencies in tackling all disasters.			
2. To adopt and implement national and local disaster risk reduction strategies and plans, across different timescales, with targets, indicators and time frames, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience;	Malaysia has a National Water Resources Council. Malaysia has a National Water Resources Policy (NWRP) in 2012. The action plans will take into consideration the National Policy on Climate Change of Malaysia. Academy of Sciences Malaysia (ASM) has instituted Stakeholder Forums on inter-sector water demand management. MyCWP has been collaborating in these forums. The ASM has recently published a recommendation paper on 'Transforming the Water Sector: National Integrated Water Resources Management Plan, Strategies and Road Map' in 2016.	Policy needs to be translated into Action Plans. Action plans are mostly focussed on structural measures which can be easily quantified in financial terms.	Societal changes are often difficult to measure and occur over a longer period of time. Much of society perceive that government should take the action instead of themselves. There is no clear mechanism on how community can engage on disaster management issues.	Advocate that Action Plans have a component related to society/community awareness and education, as well as community engagement and participation over a longer period of time, not only in the project phase but also in operational phase. Community flood/drought preparedness training can be one of the themes.
3. To carry out an assessment of the technical, financial and administrative disaster risk management capacity to deal with the identified risks at the local and national levels;	Aspects of flood mitigation and flood fighting have been implemented in urban areas, and fast growing development areas through use of mandatory Urban Stormwater Management Manual (MSMA), in 2001. In May 2012, DID Malaysia launched the MSMA 2nd Edition.	Additional works are still needed for flood control dams, canalisation and related works, river bunds, flood storage ponds; poldering; flood diversion tunnels.	The cost for future river improvement and flood mitigation works for the next decade was previously estimated to amount to more than RM15 billion. The source of funding for these projects need to come from government budget which is affected by the current global economic scenario.	There is a proposed National Water Resources Act which should also include clauses related to flood management to ensure issues related to flood be addressed in a holistic and integrated approach in evaluating the institutional capacity needed to manage flood disasters.
4. To encourage the establishment of necessary mechanisms and incentives to ensure high levels of compliance with the existing safety-enhancing provisions of sectoral laws and regulations, including those	In December 2015, the government set up the National Disaster Management Agency (NADMA) to coordinate government agencies in tackling all disasters. NADMA is set up manage and coordinate efforts against	There is uncoordinated land use control at the local authority level with respect to flood hazard. Land use control is not guided by the river basin area. There is no single agency that has considered all the different provisions, laws and regulations	Local Authorities and planners are lack detailed knowledge of flooding mechanism and flood risks in their area, or their river basin. Legal aspects had not been previously considered to an important consideration in flood	All States that do not have any Water Resources Management (WRM) law should adopt the NWR Law for enforcement of land use control at the local level to support WRM objectives. IRBM plans should be developed for all the 189 river basins in the

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addressing land use and urban planning, building codes, environmental and resource management and health and safety standards, and update them, where needed, to ensure an adequate focus on disaster risk management;	disasters in the country, together with disaster management related agencies, such as the Malaysian Armed Forces, police, Malaysian Civil Defence Department, Fire and Rescue Department, Social Welfare Department.	that are considered related to flood management. A research project on developing a GIS on legal aspects related to flood management relevant for the public, in the state of Selangor, found difficulty in identifying which laws may be relevant.	management. NADMA has only recently been set up. NADMA has small staff strength as it has still a new agency and it will take some time to implement new projects.	country which are greater than 80 sq. km. NADMA has to consider the legal provisions related to disaster management mechanism. Identify flood risk areas as Environmentally Sensitive Areas in terms of environmental disaster.
5. To develop and strengthen, as appropriate, mechanisms to follow up, periodically assess and publicly report on progress on national and local plans; and promote public scrutiny and encourage institutional debates, including by parliamentarians and other relevant officials, on progress reports of local and national plans for disaster risk reduction;	There are Integrated River Basin Management Plans developed for more than 26 river basins. In 2012, MyWP, with support from MyCWP, initiated a Malaysia Water Resources Management (MyWRM) Forum as a biennial programme. This Forum serves as a multisector platform to bring public, private, academia and NGOs together to discuss water security, and flood and drought risk issues. The MyWP forum has included flood hazards in its inaugural forum. The next MyWRM Forum will be held in 2018.	Since land use is a State issue, implementation of land use control under the IRBM is under the purview of the State and Local Authorities. However, they have inadequate technical capacity to monitor the implementation of IRBM plans. Review of flood disaster mechanism under Directive No. 20 is carried out by the National Security Council (NSC). Inadequate technical capacity to monitor the implementation of IRBM master plans	States should set up State Water Resources Agencies (SWRA) to monitor the implementation of IRBM plans, and also to work with the proposed Federal National Water Resources Department (NWRD) to update the plans. Flood disaster response was already regulated under Directive No. 20 under the NSC and the information are considered confidential.	Advocate for States to set up their SWRA. Provide training and sharing of experiences among States in establishing such an authority. Include NADMA officials in the next forum to present their projects and programmes for improving the flood disaster management mechanism.
6. To assign, as appropriate, clear roles and tasks to community representatives within disaster risk management institutions and processes and decision-making through relevant legal frameworks, and undertake comprehensive public and community consultations during the development of such laws and regulations to support their implementation;	The Integrated Flood Management (IFM) programmes supposed to be organised annually. Flood Mitigation Master Plans include consideration of legal and institutional aspects as well as stakeholder surveys. There is a MyCWP GWP-WACDEP project on community training for flood preparedness completed 2016. There is another small WACDEP demonstration project on community-level rainfall harvesting as a measure in	Only a few IFM workshops have been conducted. Some Flood Mitigation Master Plans have not undertaken comprehensive public and community consultations. At present the GWP-WACDEP project proponents are discussing replication for another community. Training is only implemented on an ad hoc way based on financing and sponsorship availability.	Lack of financing for further expansion of the IFM workshops. Need to develop relationships with local authorities to generate greater interest	Flood Mitigation Master Plans that have been prepared very much earlier without taking into consideration the holistic and integrated approach need to be reviewed. Work with the relevant agencies, such as DID and local authorities, to do a Training of Trainers course for community-level flood preparedness.

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	response to flood and drought conditions..			
<p>7. To establish and strengthen government coordination forums composed of relevant stakeholders at the national and local levels, such as national and local platforms for disaster risk reduction, and a designated national focal point for implementing the Sendai Framework for Disaster Risk Reduction 2015–2030. It is necessary for such mechanisms to have a strong foundation in national institutional frameworks with clearly assigned responsibilities and authority to, inter alia, identify sectoral and multisectoral disaster risk, build awareness and knowledge of disaster risk through sharing and dissemination of non-sensitive disaster risk information and data, contribute to and coordinate reports on local and national disaster risk, coordinate public awareness campaigns on disaster risk, facilitate and support local multisectoral cooperation (e.g. among local governments) and contribute to the determination of and reporting on national and local disaster risk management plans and all policies relevant for disaster risk management. These</p>	<p>In December 2015, the government set up the National Disaster Management Agency (NADMA) to coordinate government agencies in tackling all disasters. The core functions of NADMA are: (i.) Planning and Preparedness, (ii.) Operation Activities, and (iii.) Post Disaster Management. NADMA is set up manage and coordinate efforts against disasters in the country, together with disaster management related agencies, such as the Malaysian Armed Forces, police, Malaysian Civil Defence Department, Fire and Rescue Department, Social Welfare Department. The Drainage and Irrigation Department (DID) have adopted Integrated Flood Management approach where the concept is of 'Living with flood' based on the principles that:</p> <ul style="list-style-type: none"> • Employ a basin approach; • Treat floods as part of the water cycle; • Integrate land and water management; • Adopt a mix of strategies based on risk management approaches; • Enable cooperation between different agencies; and • Ensure a participatory approach 	<p>Under the National Security Council (NSC), the previous disaster management mechanism focused mainly on the response mechanism. This has changed under the new agency, NADMA. NADMA has only recently been set up. The stakeholders involved are primarily government agencies which have been identified to be responsible for taking action during flood disaster response. The wider categories of stakeholders are not directly involved. This leads to mismatch in coordination logistics issues when NGOs and CBOs become involved in flood relief operations. The IFM approach is advocated by DID for implementation by State and Local Authorities, however, there is lack of momentum in implementing the approach.</p>	<p>Flood response is seen to be the responsibility of the government and flood disaster management is under the NSC. NADMA has small staff strength as it has still a new agency and it will take some time to implement new projects.</p>	<p>NADMA has to strengthen the disaster management mechanism. Include the participation of a wider group of stakeholders, such as NGOs, CBOs, organized voluntary work organizations, in working together with relevant agencies identified by NADMA. MyCWP can interact with NADMA to offer collaboration and assistance. DID is planning to conduct additional IFM workshops under the 11th Malaysia Plan.</p>

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responsibilities should be established through laws, regulations, standards and procedures.				
8. To empower local authorities, as appropriate, through regulatory and financial means to work and coordinate with civil society, communities and indigenous peoples and migrants in disaster risk management at the local level;	MyCWP/MyWP participate in facilitating technical seminars and public awareness programmes which conducted together with stakeholders in different locations around the country in conjunction with the national level World Water Day and World Rivers Day. MyCWP partners have developed a youth and community-based river appreciation and monitoring programme called “River Rangers” which is being implemented at the state level.	Training and projects are small scale and need to be implemented on a wider scale through out the country	Insufficient financial resources and limited human resources to conduct training on flood and drought management especially at community level .	Conduct training of trainers workshop in collaboration with local authorities and key government agencies to spread the practice. Gender perspectives and involvement of youth should also be included in these courses.
9. To encourage parliamentarians to support the implementation of disaster risk reduction by developing new or amending relevant legislation and setting budget allocations;	Parliamentarians are aware of the national disaster response mechanism. As elected representatives, they become involved in the response stage and also in the post-disaster stage in advocating for their constituents.	They are not directly involved in developing new or amending relevant legislation and setting budget allocations for disaster risk management as this was under the National Security Council.	Lack of awareness, understanding and guidance on the legal governance necessary.	Initiate programmes on awareness and education linking disaster management with legislation and land-use management at the state level.
10. To promote the development of quality standards, such as certifications and awards for disaster risk management, with the participation of the private sector, civil society, professional associations, scientific organizations and the United Nations;	Awards are given for environmental management, landscaping, green city. Awards are given to individual persons recognising their service in disaster response.	No national level awards for disaster risk management.	Lack of awareness, understanding and guidance.	Develop national level quality standards, such as certifications and awards for disaster risk management. Identify quality and standards required and make regular assessments.
11. To formulate public policies, where applicable, aimed at addressing the issues of prevention or relocation, where possible, of human	In several states river reserve areas have been gazetted to prohibit development and control activities. Policies on development in	There are no specific policies to ban/control development in potential flood risk areas. Many river reserve areas are not gazetted and are used as	Lack of financial capacity; lack of awareness, understanding and guidance. Belief that engineering solutions can always be found to overcome	Gazette all river reserve areas and identify hazard areas of prohibited/controlled development; State authorities should designate the low-lying,

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settlements in disaster risk-prone zones, subject to national law and legal systems.	Environmentally Sensitive Areas are available in the National Physical Plan.	development areas, sometimes illegally. Reluctance of individuals to move out of hazard/disaster risk area.	problems. Developers seek to use any available land for development in urban areas.	undeveloped areas along a river corridor, that have been identified as flood detention zones in river basin Flood Mitigation (FM) master plan, as flood protection zones. There should be a FM master plan for every river basin, that highlights the undeveloped low-lying flood-prone areas where development have to be controlled.

Priority 3: Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation.

Goal	Current Achievement	Gaps	Causes	Solutions
1. To allocate the necessary resources, including finance and logistics, as appropriate, at all levels of administration for the development and the implementation of disaster risk reduction strategies, policies, plans, laws and regulations in all relevant sectors;	Budget is allocated annually to the DID to implement flood mitigation projects.	The measures taken are based on historical hydro-meteorological conditions which may not correctly indicate climate change induced variations.	Historical data does not incorporate the uncertainty due to climate change induced variations.	Incorporate risk-based thinking in allocating resources, using the results of NAHRIM climate change forecast models.
2. To promote mechanisms for disaster risk transfer and insurance, risk-sharing and retention and financial protection, as appropriate, for both public and private investment in order to reduce the financial impact of disasters on Governments and societies, in urban and rural areas;	Public funding given for flood mitigation projects in urban areas. MSMA guidelines is a mechanism for responsibility and financing from private sector developers. New government initiative, announced on 17 August 2017, to develop and subsidise flood insurance scheme for residents in flood high-risk areas.	Lack of financial mechanisms for flood risk preparedness, mitigation, control, response and recovery among different stakeholders.	Previous flood events are considered part of natural phenomena. Flash floods are often unpredictable. General public unaware of insurance possibilities. Only few insurers include floods/water damage in their policy.	Identify examples of mechanisms from other countries which can be applied in Malaysia.
3. To strengthen, as appropriate, disaster-resilient public and private investments, particularly through structural, non-structural and functional disaster risk prevention and reduction measures in critical facilities, in particular schools and hospitals and physical infrastructures; building better from the start to withstand hazards through proper design and construction, including the use of the principles of	Aspects of flood mitigation and flood fighting have been implemented in urban areas, and fast growing development areas through use of mandatory drainage design guidelines (MSMA). Buildings have to fulfil certificate of fitness inspection prior to occupation.	Guidelines for construction and infrastructures are for existing situation and not for climate change induced extremes.	Lack of financial capacity and perception that a disaster is unlikely to occur in the near future. Extreme flood events are regarded to be rare, thus there is reluctant to invest for these rare events..	Better education on awareness of extreme event occurrence especially as a result of climate change impacts on the hydro-meteorological system. New guidelines for potential extreme events in high risk zones. Identification of new measures which may need to be implemented due to climate change induced changes in hydro-meteorological conditions.

Goal	Current Achievement	Gaps	Causes	Solutions
universal design and the standardization of building materials; retrofitting and rebuilding; nurturing a culture of maintenance; and taking into account economic, social, structural, technological and environmental impact assessments;				
4. To protect or support the protection of cultural and collecting institutions and other sites of historical, cultural heritage and religious interest;	Identification of areas and buildings of interest.	No specific consideration given with respect to floods.	Lack of awareness, knowledge, understanding and guidance on the potential effects.	Identify heritage policy/planning needed, especially with respect to extreme flood events which may become more common occurrences.
5. To promote the disaster risk resilience of workplaces through structural and non-structural measures;	Building codes need to be complied with.	No specific consideration given with respect to floods.	Lack of awareness, knowledge, understanding and guidance on the potential impacts.	Identify relevant codes especially with respect to extreme events which may become more common occurrences. Identify quality and standards required and make regular inspections especially prior to the flood season.
6. To promote the mainstreaming of disaster risk assessments into land-use policy development and implementation, including urban planning, land degradation assessments and informal and non-permanent housing, and the use of guidelines and follow-up tools informed by anticipated demographic and environmental changes;	National Physical Plan-2 (NPP2) prepared by Federal Department of Town and Country Planning, Ministry of Housing and Local Government (2010) and the National Urbanization Policy have considered sustainable land-use in the face of climate change impacts.	The NPP2 was last reviewed 7 years ago. The extreme flood events faced in 2014-2015, indicate that there should be new consideration of extreme events which may not have been fully considered previously.	Historical data does not fully indicate the challenges faced in view of climate change impacts.	Review policy with respect to extreme events which may become more common occurrences.
7. To promote the mainstreaming of disaster risk assessment, mapping and management into rural development planning and	The following studies have been conducted in relation to climate change induced disasters: National Coastal Vulnerability Index Study, Climate Change	Many of the results of the studies have remained "on the shelf" and not translated into implementation.	The translation of study recommendation to implementation takes a considerable period of time and also financial commitment.	Review and identify key recommendations and timelines for action, especially with respect to the National Water Resources Policy and the

Goal	Current Achievement	Gaps	Causes	Solutions
management of, inter alia, mountains, rivers, coastal flood plain areas, drylands, wetlands and all other areas prone to droughts and flooding, including through the identification of areas that are safe for human settlement, and at the same time preserving ecosystem functions that help to reduce risks;	and its Relationship to Disease Patterns in Malaysia, National Physical Plan-2 (includes Environmentally Sensitive Areas), Impact of Climate Change on Hydrologic Regime and Water Resources in Peninsular Malaysia.			National Policy on Climate Change.
8. To encourage the revision of existing or the development of new building codes and standards and rehabilitation and reconstruction practices at the national or local levels, as appropriate, with the aim of making them more applicable within the local context, particularly in informal and marginal human settlements, and reinforce the capacity to implement, survey and enforce such codes through an appropriate approach, with a view to fostering disaster-resistant structures;	Existing building codes are reviewed when disasters are identified to require some changes to be made.	Flood has not been identified to be an event which requires a change in the building code.	Lack of awareness and understanding on the impact of building design on community resilience to flood disaster.	Educate on the design guidelines used in other countries, e.g. FEMA, USA, for buildings located in a flood risk zone.
9. To enhance the resilience of national health systems, including by integrating disaster risk management into primary, secondary and tertiary health care, especially at the local level; developing the capacity of health workers in understanding disaster risk and applying and implementing disaster risk reduction approaches in	Study on 'Climate Change and Its Relationship to Disease Patterns in Malaysia' has been conducted. Relief workers are trained in management of the relief centre in terms of organisation, procedures and communications under the formal flood disaster management mechanism. The Ministry of Health (MOH) initiated the Water Safety Plan for Malaysia since 2012. The main focus of MOH is in non-	Training of response staff focus on the individuals directly responsible in the flood response mechanism at the state level. Much of the training is in primary and secondary level health care and prevention of spread of water-borne diseases.	Limitation in the number of trained staff available in managing large or wide-scale disasters.	Improve training capacity across all health staff levels, especially at the local level, including for community based organisations.

Goal	Current Achievement	Gaps	Causes	Solutions
health work; promoting and enhancing the training capacities in the field of disaster medicine; and supporting and training community health groups in disaster risk reduction approaches in health programmes, in collaboration with other sectors, as well as in the implementation of the International Health Regulations (2005) of the World Health Organization;	communicable diseases. During the 2014 – 2015 floods the effect of this Plan was evident when the outbreak of waterborne diseases was prevented through awareness, advocacy and capacity building programmes.			
10. To strengthen the design and implementation of inclusive policies and social safety-net mechanisms, including through community involvement, integrated with livelihood enhancement programmes, and access to basic health-care services, including maternal, newborn and child health, sexual and reproductive health, food security and nutrition, housing and education, towards the eradication of poverty, to find durable solutions in the post-disaster phase and to empower and assist people disproportionately affected by disasters;	In December 2015, the government set up the National Disaster Management Agency (NADMA) to coordinate government agencies in tackling all disasters. The core functions of NADMA are: (i.) Planning and Preparedness, (ii.) Operation Activities, and (iii.) Post Disaster Management	In post-disaster, the type of assistance and placement to be given to the victims is not clearly stated. This has led to restoration projects having to be discussed by the higher authorities and this requires a long-time. Because of that, the victims need to stay at the evacuation centres or stay at their relative's houses for a long period of time. This situation makes them uncomfortable and can affect their quality of life.	There are still shortcomings in terms of misunderstanding in implementing policies enacted by the government led to disaster management becomes ineffective despite the Directive No. 20 has been tabled.	NADMA should review the formulation of post-disaster policy, process and potential action plans required.
11. People with life-threatening and chronic disease, due to their particular needs, should be included in the design of policies and plans to manage their risks before, during and after disasters, including having access to life-saving	Flood victims are advised to bring their medications and keep in an emergency bag on evacuation.	No specific consideration given to special preparation for this category of flood victims.	Lack of awareness on the potential problems or situations which might occur..	Need to incorporate in flood disaster evacuation plans and facilities.

Goal	Current Achievement	Gaps	Causes	Solutions
services;				
12. To encourage the adoption of policies and programmes addressing disaster-induced human mobility to strengthen the resilience of affected people and that of host communities, in accordance with national laws and circumstances;	Evacuation plans are available in case of flood disaster.	Negative attitudes of flood victims make relief management difficult.	Community is not regularly involved in flood disaster response exercises and are unaware of the logistical complexities. Many communities expect the government to take all the necessary action and do not become pro-active in disaster preparedness. Public apathy towards participation, with the attitude that Government will provide everything.	Future actions should involve the community in the planning and formulation of policies and make the implementation of comprehensive assistance in policy or programme planning and implementation more feasible.
13. To promote, as appropriate, the integration of disaster risk reduction considerations and measures in financial and fiscal instruments;	Annual budget allocated for disaster mitigation projects by government agencies. A National Disaster Fund is available. In 2015, the government made available additional funding for restoration and rehabilitation after the extreme 2014-15 floods. Special funding was also allocated for research on flood disaster response and reduction to universities. New developments need to apply the MSMA guidelines in order to mitigate and reduce flooding.	Previously the main focus was on the government response mechanism, especially for flood mitigation.	Flooding is considered a annually occurring event in many states; to be overcome using engineering solutions in urban areas as a post-development solution.	To identify any additional measures that need to be taken, together with legal provisions to provide penalties/incentives for appropriate development in potential flood risk areas.
14. To strengthen the sustainable use and management of ecosystems and implement integrated environmental and natural resource management approaches that incorporate disaster risk reduction	From the Stakeholder Forum For Incorporating Climate Resilience In The National Water Resources Policy Action Plans, 27-28 October 2014, organised by MyWP with DID with support by MyCWP, among the approaches proposed to be adopted are: <ul style="list-style-type: none"> Advocate the concept of Living with Flood and incorporate Integrated Flood 	Only intermittent projects are conducted using these approaches. Some challenges are: <ul style="list-style-type: none"> Floodplains are continuously being developed, Residents/stakeholder have high expectations and less tolerance towards flooding, Structural flood management costs are rising, and Non-structural approach has 	This is mainly due to lack of capacity, financial allocation and human resources. Studies need to be carried out at basin level to evaluate flood risk potential under different scenarios of development and land-use patterns. The general public expect a top-down approach when it comes to disaster management.	Identify typical river basins as prototypes for resources management and development considerations. Conduct Training of Trainers to build the case of human resources who can contribute to awareness and training programmes at the community level. Engage with private sector in contributing towards these

Goal	Current Achievement	Gaps	Causes	Solutions
	<p>Management (IFM) in development plans;</p> <ul style="list-style-type: none"> • Adopt Best Management Practices/Plans; and • Stakeholder Engagement. 	not been well accepted (IFM, IWRM).		programmes as part of their CSR in involving local communities in managing their surroundings.
15. To increase business resilience and protection of livelihoods and productive assets throughout the supply chains, ensure continuity of services and integrate disaster risk management into business models and practices;	Businesses plan based on traditional patterns of natural climate. As flooding is a regularly occurring event in several states, businesses are already aware of potential disruptions based on previous experience.	Expectation of variations in business and supply chains is based on traditional natural climate phenomena. When extreme or unusual weather patterns occur, businesses may be caught by surprise.	Lack of awareness and understanding on the impact of climate change induced weather extremes leading to flood and drought disasters on businesses.	To identify any additional measures that need to be taken, together with legal provisions to provide penalties/incentives for appropriate development in potential flood risk areas.
16. To strengthen the protection of livelihoods and productive assets, including livestock, working animals, tools and seeds;	<p>Agricultural activities are arranged based on naturally occurring climate events in high risk flood areas.</p> <p>Government also provides financial support in case of disasters. For example, in the early 2015 flood event, affected farmers in the MADA granary area were awarded cash relief by the Government at RM1,009.00 per ha for a total of RM100.89 million.</p>	This planning is based on traditionally natural flood events. The recent extreme floods of end 2014 is an indicator of lack of preparedness for unusual events.	Lack of awareness and understanding on climate change induced weather extremes leading to flood and drought disaster on agriculture.	<p>To identify additional measures that need to be taken, for protection and appropriate agricultural development in potential flood risk areas.</p> <p>Agribusinesses need to understand the limitations of the water management systems also take on the responsibility for risk sharing and management.</p> <p>Develop planning and design criteria for nonpaddy crops, livestock and aquaculture to increase yields, stabilise production, flood resilience and sustainable development as part of climate actions.</p>
17. To promote and integrate disaster risk management approaches throughout the tourism industry, given the often heavy reliance on tourism as a key economic driver.	The tourism industry calendar is organised around naturally occurring flood events in high risk areas.	This planning is based on traditionally natural flood events.	Lack of awareness and understanding on climate change induced flood disasters and their impact on tourism.	To identify any additional measures that need to be taken, for appropriate tourism development in potential flood disaster risk areas.

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

The steady growth of disaster risk, including the increase of people and assets exposure, combined with the lessons learned from past disasters, indicates the need to further strengthen disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels. Empowering women and persons with disabilities to publicly lead and promote gender equitable and universally accessible response, recovery, rehabilitation and reconstruction approaches is key. Disasters have demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of a disaster, is a critical opportunity to “Build Back Better”, including through integrating disaster risk reduction into development measures, making nations and communities resilient to disasters.

Goal	Current Achievement	Gaps	Causes	Solutions
1. To prepare or review and periodically update disaster preparedness and contingency policies, plans and programmes with the involvement of the relevant institutions, considering climate change scenarios and their impact on disaster risk, and facilitating, as appropriate, the participation of all sectors and relevant stakeholders;	In December 2015, the government set up the National Disaster Management Agency (NADMA) to coordinate government agencies in tackling all disasters. NADMA is set up manage and coordinate efforts against disasters in the country, together with disaster management related agencies.	There is need to review lessons learnt and previous information on flood disaster operations in order to improve current action plans with the participation of all sectors and relevant stakeholders.	NADMA is newly formed with limited human resources but has been mandated to improved the disaster reduction and response mechanism.	Collaborate and assist NADMA in providing assistance, recommendations, training for improving the flood disaster risk management process through involvement of stakeholders.
2. To invest in, develop, maintain and strengthen people-centred multi-hazard, multisectoral forecasting and early warning systems, disaster risk and emergency communications mechanisms, social technologies and hazard-monitoring telecommunications systems; develop such systems through a participatory process; tailor them to the needs of users, including social and cultural requirements, in particular gender; promote the application of simple and low-cost early warning equipment and facilities; and broaden release channels for natural disaster early warning	There is a National Flood Forecasting and Warning System (NaFFWS) set-up with website for the general public. There are also a few mobile apps which link to these data. Since 1980, flood warning boards have been erected in the major river systems. These measures are part of the integrated flood forecasting and river monitoring system (iFFRM). Recently, there is a Malaysia/UK collaboration project involving public-private partnership is focussed on developing an Earth and Sea Observation System (EASOS). The foundation of the work based on satellite enhanced flood modelling capability together with specialist teams of weather and flood forecasting	For flash floods, there is little lead time is available for effective warning. The EASOS project's trial run is expected to be completed by May 2018. Previously the flood warning system was developed from a primarily technical and engineering perspective with limited stakeholder participation. In some instances warning systems suffered vandalism of equipment at stations; with complacency on part of community in response to flood warnings.	Flooding is considered a annually occurring event in many states; to be overcome using engineering solutions in urban areas as a post-development solution.	To evaluate the EASOS in operational mode. To improve the forecasting the warning system with multi-sectoral stakeholder participation in all aspects. The initiative of the DID in inviting for academia to participate in the development of the flood forecasting model in a good step in this direction. The DID has already began collaboration with MyCWP/MyWP, other NGOs and university in community-based training to empower local communities to improve readiness and build resilience. So we should continue with this collaboration and also bring on board NADMA.

Goal	Current Achievement	Gaps	Causes	Solutions
information;	experts. The 18 month project began in December 2016 and the trial run is expected to be completed by May 2018. Members of academia have been invited to provide input for the development of the new flood warning system. The meeting will be conducted in August 2017.			
3. To promote the resilience of new and existing critical infrastructure, including water, transportation and telecommunications infrastructure, educational facilities, hospitals and other health facilities, to ensure that they remain safe, effective and operational during and after disasters in order to provide live-saving and essential services;	Current engineering and building codes are available.	Guidelines on evaluating resilience of infrastructure to extreme flood events required. Flood has not been identified to be an event which requires a change in the building code.	Lack of experience in extreme flood events which are previously rare. Lack of awareness and understanding on the impact of building design on community resilience to flood disaster. The lack of a clear regulations linked to flood disaster management is another issue.	To evaluate resilience of critical infrastructure to flood events. Educate on the design guidelines used in other countries, e.g. FEMA, USA, for buildings located in a flood risk zone.
4. To establish community centres for the promotion of public awareness and the stockpiling of necessary materials to implement rescue and relief activities;	Flood relief centres and equipment stores are identified through the national disaster management mechanism.	The identified centres are insufficient in major/extreme events. There have been concerns of poor disaster relief management at the evacuation centre. This includes irregular, inadequate and slow assistance provided to victims.	Lack of experience in extreme flood events which previously affected small populations in low rural areas. Resources are stretched across several centres, there may be insufficient equipment and facilities and logistics may be compromised due to this.	Take into consideration extreme events and identify suitable measures to be taken. Involve communities in awareness of their relief centres and establish regular monitoring of facilities needed. Identify quality and standards required and make regular inspections at such centres, especially prior to the flood season.
5. To adopt public policies and actions that support the role of public service workers to establish or strengthen coordination and funding mechanisms and procedures for relief assistance and plan and prepare for post-disaster	Local councils and public service workers are integral in the flood response action plan.	Current plans are based on previous floods and may be insufficient in major/extreme events.	Lack of experience in extreme flood events which had not been experienced before under conditions of increased populations and urbanisation.	Take into consideration extreme events and identify suitable measures to be taken.

Goal	Current Achievement	Gaps	Causes	Solutions
recovery and reconstruction;				
6. To train the existing workforce and voluntary workers in disaster response and strengthen technical and logistical capacities to ensure better response in emergencies;	Natural Disaster Relief Committee train the government departments/agencies and social organizations which provide shelter, rescue and food supplies in case of disaster to ensure that its machinery will run smoothly normally before the Northeast monsoon at the end of the year.	Training is normally conducted only prior to the expected flood season. Current plans are based on previous floods and may be insufficient in major/extreme events.	Lack of training experience in extreme flood events which had not been experienced before under conditions of increased populations and urbanisation.	Increase training scope to take into consideration extreme events and identify suitable measures to be taken.
7. To ensure the continuity of operations and planning, including social and economic recovery, and the provision of basic services in the post-disaster phase;	The National Security Council's Emergency Control Centre (ECC) that acts as a central command and control facility to manage any public threats or emergency. It is responsible for carrying out the activities for the entire phases of disaster: mitigation, preparedness, response and rehabilitation that functions at a strategic and tactical level in an emergency situation. After the extreme floods at the end of 2014, in January 2015, the Prime Minister of Malaysia allocated a budget of RM893 million for flood mitigation works, RM800 million as initial allocation for the repair and reconstruction of basic infrastructure like schools, hospitals, roads, and bridges, RM500 million for rehabilitation works and welfare programmes, and RM500 million special relief facility for SME loan financing.	Current plans are based on previous floods and may be insufficient in major/extreme events.	The complexity and size of the disaster will determine which level the disaster will be placed, together with the responsible agencies. Lack of experience in extreme flood events which previously affected small populations in low rural areas.	Increase scope of operations to take into consideration extreme events and identify suitable measures to be taken.
8. To promote regular disaster preparedness, response and recovery exercises, including evacuation drills, training and the establishment of area-based support systems,	Under Directive No. 20, agencies involved in the flood disaster management lifecycle are to be responsible for its own implementation and execution of roles and activities.	Training is normally conducted only prior to the expected flood season. Current plans are based on previous floods and may be insufficient in major/extreme	The complexity and size of the disaster will determine which level the disaster will be placed, together with the responsible agencies.	Increase training scope to take into consideration extreme events and identify suitable measures to be taken. Ensure regular training schedule for preparedness.

Goal	Current Achievement	Gaps	Causes	Solutions
with a view to ensuring rapid and effective response to disasters and related displacement, including access to safe shelter, essential food and non-food relief supplies, as appropriate to local needs;	DID has published Circular No. 2/2003 “Guidelines for Management of Flood Disaster during Monsoon Season and Flash Floods” which is to coordinate the preparation of flood operation at federal, state and district levels.	events.		
9. To promote the cooperation of diverse institutions, multiple authorities and related stakeholders at all levels, including affected communities and business, in view of the complex and costly nature of post-disaster reconstruction, under the coordination of national authorities;	The main functions of the Disaster Management and Relief Committee (DMRC) includes establishing a recovery systems for the community to return to its normalcy. Agencies are identified at all levels of government to be directly involved in the post-disaster reconstruction.	Primarily government and government-related agencies are those involved in post-disaster recovery. These mainly concentrate on the physical infrastructure recovery. Issues related to socio-economic aspects are additional.	Flood disaster management has been mainly considered as a technical and engineering problem and little attention has been given to psychological, social and community aspects of rehabilitation.	Take into consideration extreme events which may become more important as a result of climate change; and include wider group of stakeholders in awareness, training, and preparation for flood disaster management.
10. To promote the incorporation of disaster risk management into post-disaster recovery and rehabilitation processes, facilitate the link between relief, rehabilitation and development, use opportunities during the recovery phase to develop capacities that reduce disaster risk in the short, medium and long term, including through the development of measures such as land-use planning, structural standards improvement and the sharing of expertise, knowledge, post-disaster reviews and lessons learned and integrate post-disaster reconstruction into the economic and social sustainable development of affected areas. This should	Flood disaster evaluation and flood mitigation studies are conducted after unusual events in order to develop flood mitigation measures including development of flood control structures. After the extreme flood at the end of 2014, the government allocated special funding was given to reconstruct and rehabilitate areas affected as well as conduct research on all aspects of flood disaster management.	An important gap identified as a result of the 2014 extreme floods was the lack of information on illegal land use and the lack of awareness and understanding of the community on the consequences of inappropriate land use.	Previous experiences of floods did not encounter such a problem affecting a sizeable number of people.	NADMA is expected to use existing disaster management mechanisms while it is in the process of improving procedures in line with global best practices. Include all sectors at all levels (communities and businesses) in the whole cycle of operations for flood disaster management. Action plans for post-flood recovery options should be developed.

Goal	Current Achievement	Gaps	Causes	Solutions
also apply to temporary settlements for persons displaced by disasters;				
11. To develop guidance for preparedness for disaster reconstruction, such as on land-use planning and structural standards improvement, including by learning from the recovery and reconstruction programmes over the decade since the adoption of the Hyogo Framework for Action, and exchanging experiences, knowledge and lessons learned;	The National Security Council has developed Operation Procedure No.29 for the organization of flood relief and operations. DID has published Circular No. 2/2003 “Guidelines for Management of Flood Disaster during Monsoon Season and Flash Floods” to coordinate the preparation of flood operation at federal, state and district levels.	Circulars are normally internal documents, not know or generally available to the public.	Government Circulars are intended for internal consumption for operational implementation.	Guidelines are required for different levels of society and different communities an businesses to also make them aware and more knowledgeable about flood disaster management and preparedness.
12. To consider the relocation of public facilities and infrastructures to areas outside the risk range, wherever possible, in the post-disaster reconstruction process, in consultation with the people concerned, as appropriate;	Improvement of facilities, upgrading works and flood mitigation structures are considered in reconstruction. Public consultation is sometimes conducted.	Public consultation is infrequently conducted, often in the form of targeted focus groups of formal local leaders.	The general public/local community is not considered as an important source for consultation due to their incomplete awareness, understanding, expertise in flood disaster management. Fear of blame accusations being placed on government agencies since there is a belief that all disaster response is the responsibility of the government.	Increase level of awareness, understanding, and knowledge of local communities potentially at risk or affected by flood disaster. This can include sharing of experiences, discussion of issues and problems in flood disaster management. There is a need to develop a civil society culture of self-help and resilience building in the face of uncertainties due to disasters resulting from climate change impacts.
13. To strengthen the capacity of local authorities to evacuate persons living in disaster-prone areas;	Local Authorities are directly involved in flood disaster management at their district level.	Infrequency of training may result in unpreparedness on the part of some local authority officials.	Only areas of frequent flooding are given focus and obtain experience in flood management.	Sharing of experiences and participation across districts may enhance capacity of local authority officials.
14. To establish a mechanism of case registry and a database of mortality caused by disaster in order to improve the prevention of morbidity and mortality;	The National Disaster Management System (NDMS) is able to support the disaster management at a federal level by providing information management that includes data analysis, historical data, activity monitoring and action status.	The information is considered confidential information.	The NDMS is under the National Security Council management. There is a fear that incorrect, sensational, exaggerated news and rumours may result if the information is released prior to verification or taken out of context.	NADMA can act as the central agency to be responsible for the database as part of its operation and planning process. Comparative analysis of the data and information can provide better approaches for planning and flood disaster response

Goal	Current Achievement	Gaps	Causes	Solutions
	Information on mortality of flood victims are available based on specific flood events.			management.
15. To enhance recovery schemes to provide psychosocial support and mental health services for all people in need;	Recovery schemes provide financial and social assistance for flood victims.	Recovery schemes do not provide psychological support for victims. Poor disaster relief management of victims' psychological trauma at the evacuation centre and post event.	Lack of awareness on the need for such support for victims. Flood disaster management has been mainly considered as a technical and engineering problem and little attention has been given to psychological, social and community aspects of rehabilitation.	Provide specialised training required, especially on psychological trauma and post-disaster rehabilitation.
16. To review and strengthen, as appropriate, national laws and procedures on international cooperation, based on the Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance.	DID has published Circular No. 2/2003 "Guidelines for Management of Flood Disaster during Monsoon Season and Flash Floods" which is to coordinate the preparation of flood operation at federal, state and district levels. NADMA is set up manage and coordinate efforts against disasters in the country, together with disaster management related agencies, such as the Malaysian Armed Forces, police, Malaysian Civil Defence Department, Fire and Rescue Department, Social Welfare Department.	NADMA has only recently been set up. NADMA has small staff strength as it has still a new agency and it will take some time to implement new projects.	Legal aspects had not been previously considered to an important consideration in flood management.	NADMA has to review the current legal provisions related to disaster management mechanism. Interact with NADMA to offer collaboration and assistance.

The role of stakeholders is described in the Sendai Framework for Disaster Risk Reduction 2015-2030 and is applied across all priorities. These roles are given in the table below.

Role of stakeholders

When determining specific roles and responsibilities for stakeholders, and at the same time building on existing relevant international instruments, States should encourage the following actions on the part of all public and private stakeholders:

Goal
a. Civil society, volunteers, organized voluntary work organizations and community-based organizations to participate, in collaboration with public institutions, to, inter alia, provide specific knowledge and pragmatic guidance in the context of the development and implementation of normative frameworks, standards and plans for disaster risk reduction; engage in the implementation of local, national, regional and global plans and strategies; contribute to and support public awareness, a culture of prevention and education on disaster risk; and advocate for resilient communities and an inclusive and all-of-society disaster risk management that strengthen synergies across groups, as appropriate.
b. Academia, scientific and research entities and networks to focus on the disaster risk factors and scenarios, including emerging disaster risks, in the medium and long term; increase research for regional, national and local application; support action by local communities and authorities; and support the interface between policy and science for decision-making;
c. Business, professional associations and private sector financial institutions, including financial regulators and accounting bodies, as well as philanthropic foundations, to integrate disaster risk management, including business continuity, into business models and practices through disaster-risk-informed investments, especially in micro, small and medium-sized enterprises; engage in awareness-raising and training for their employees and customers; engage in and support research and innovation, as well as technological development for disaster risk management; share and disseminate knowledge, practices and non sensitive data; and actively participate, as appropriate and under the guidance of the public sector, in the development of normative frameworks and technical standards that incorporate disaster risk management;
d. Media to take an active and inclusive role at the local, national, regional and global levels in contributing to the raising of public awareness and understanding and disseminate accurate and non-sensitive disaster risk, hazard and disaster information, including on small-scale disasters, in a simple, transparent, easy-to-understand and accessible manner, in close cooperation with national authorities; adopt specific disaster risk reduction communications policies; support, as appropriate, early warning systems and life-saving protective measures; and stimulate a culture of prevention and strong community involvement in sustained public education campaigns and public consultations at all levels of society, in accordance with national practices.

Additional References

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