Document of

The World Bank

MOROCCO INTEGRATED DISASTER RISK MANAGEMENT AND RESILIENCE PROGRAM

Technical Assessment Report

March 17, 2016

Acronyms and Abbreviations

AAL	Average Annual Loss
ACAPS	Insurance and Social Welfare Supervisory Authority (*Autorité de Contrôle des Assurances et de la Prévoyance Sociale*)
ABH	*Agence du Bassin Hydraulique* (Water Basin Agency)
BCR	Benefit Cost Ratio
CAS	*Compte d'Affection Spéciale* (Dedicated Budget Instrument)
CfP	Call for Proposals
DAPS	*Direction des Assurances et de la Prévoyance Sociale (*Department of Insurance and Social Welfare)
DLI	Disbursement Linked Indicator
FLCN	*Fonds de Lutte contre les Catastrophes Naturelles* (Fund for the Fight against Natural Disasters)
FSEC	*Fonds de Solidarité Contre les Evenements Catastrophiques* (Catastrophic Events Solidarity Fund)
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GOM	Government of Morocco
IGAT	*Inspection Générale de l'Administration Territoriale* (General Inspectorate of Territorial Administration)
IRR	Internal Rate of Return
MAGG	*Ministère des Affaires Générales et de la Gouvernance* (Ministry of General Affairs and Governance)
MnhPRA	Morocco Natural Hazards Probabilistic Risk Assessment
M&E	Monitoring and Evaluation
MEF	Ministry of Finance
MoI	MoI
MoU	Memorandum of Understanding
M_w	Magnitude of an earthquake (technically, moment magnitude)
PAP	Program Action Plan
PDO	Program Development Objective
POM	Program Operations Manual
SCR	*Société Centrale de Reassurance* (Central Reinsurance Company)

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A. Introduction

1. **Morocco has suffered significantly from a variety of shocks, including due to natural hazards, and in response has started to develop risk management programs and initiatives, supported by the World Bank.** Since 2009 the World Bank has worked with the Government of Morocco (GoM) to enhance risk management activities, including in the areas of natural disaster risk, commodity (energy) price volatility risk and risk in the agricultural sector, through a program of Technical Assistance. Particular focus has been put on investing in disaster risk analytical capacity by developing the *Morocco Natural Hazards Probabilistic Risk Assessment* tool (MnhPRA) and on disaster risk financing and insurance. The World Bank also supported the Government in starting to develop a more comprehensive approach to managing risks in a more integrated manner which culminated in a report in 2013 on "*Building Morocco's Resilience: Inputs into an Integrated Risk Management Strategy*"[1]. In 2012, the Government requested the World Bank to support the implementation and operationalization of a more integrated risk and resilience management approach through a new lending operation in the form of a "Program for Results" (PforR) loan, with a focus on initial subset of risk, starting with natural hazards first. This document provides the Technical Assessment of the proposed operation along all its dimensions, including i) Program Description; ii) Program Strategic Relevance; iii) Technical Soundness; iv) Program Expenditure Framework and Financial Sustainability; v) Program Results Framework and Disbursement Linked Indicators; vi) Program Economic Impact; vii) Input into the Program Action Plan; viii) Technical Risks and Mitigation Measures; and ix) Input into the Implementation Support Plan.

B. Program Description

Government Program

2. Morocco has begun developing an integrated DRM reform program which combines elements of institutional reform with risk reduction investments and risk insurance to ensure that residual risks that cannot be cost-effectively mitigated are efficiently financed. The Government program consists of the consolidation and further development of Morocco's risk management activities and specifically aims to: (i) improve Morocco's institutional DRM framework and capacity; (ii) scale up disaster risk reduction investments in both structural and non-structural measures[2] and assure such investments are transparently selected, strategic, and cost effective; and (iii) protect vulnerable populations and economic assets through creation of catastrophic risk insurance and a financial safety net for the most vulnerable who are often not insured.[3]

Subprogram One: Promoting Institutional Reform and Capacity Building

3. The objective of the first Subprogram is to further develop Morocco's existing institutional DRM structure. As an initial step, the Government has begun improving its approach to managing disaster risks with a focus on promoting ex-ante mitigation and preparedness, to complement its post-event recovery activities. To this end, the Government has begun to fundamentally reform its FLCN so that it can

[1] World Bank Group (2013): Building Morocco's Resilience: Inputs for an Integrated Risk Management Strategy.
[2] DRM distinguishes between structural measures – those that directly reduce damage – and non-structural measures that indirectly will lead to damage reduction. Structural measures are typically engineering projects such as flood protection walls or seismically retrofitting buildings. Non-structural measures are often broader in their nature, such as building codes, hazard mapping and warning systems, and also include activities such as risk awareness campaigns and risk analysis. For further information, see http://www.unisdr.org/we/inform/terminology#letter-s.
[3] Morocco's need for a more proactive approach to risk management, the reduction of institutional fragmentation, and development of a risk insurance framework was a key conclusion of the multi-year partnership between the Government of Morocco and the World Bank (see also Box 1).

develop into a "national resilience fund". The reform seeks to establish a more systematic process within the Government of Morocco, addressing DRM in an integrated manner covering DRM activities implemented by central government line ministries and other national entities (horizontal integration) and also by provincial and local governments (vertical integration). It thereby aims to improve Morocco's strategic orientation and governance arrangements for DRM around the improved operation of the FLCN, with a focus on ex-ante mitigation and preparedness.

Box 1. Operating Experience of the Fonds de Lutte Contre les Effets des Catastrophes Naturelles (FLCN) to date

The FLCN was established by the 2009 Budget Law as a budget instrument (*Compte d'Affectation Spéciale*, CAS)[4] within MoI, in response to a series of natural catastrophes in Morocco, specifically the floods in Gharb province in 2008. The total budget of the CAS-FLCN for the period 2009–2012 was MAD 1,960 million, composed of an initial MAD 861 million donation from Saudi Arabia in the immediate aftermath of the 2008 floods, MAD 300 million from the Hassan II Fund for Economic and Social Development, and MAD 800 million from the national budget over this four year period (MAD 200 million per year). A total of MAD 830 million or 43 percent of the funds went to reconstruction and repair of areas affected by the floods (e.g., damaged roads, irrigation infrastructure, emergency program for housing flood victims and housing reconstruction, and support for post-disaster business re-startup). In addition, funds were allocated to pre-disaster risk reduction measures and preparedness, including flood protection works and construction or improvement of weather stations for improved quality and accuracy of weather forecasts. This preventative investment portion represented MAD 800 million or 40 percent of the FLCN's 2009–2012 budget resources. The remaining MAD 310 million (17 percent), was spent for emergency response preparedness, including equipment for the Civil Protection Agency.

4. During this initial period (2009–2104), the FLCN mainly played the role of a budgetary intermediary, redistributing funds from donations and governmental budget allocations to central government line Ministries. Moreover, there were no clear selection criteria regarding the type of projects to be financed and most of the selection was done on an ad hoc basis, with no analytical basis for allocating fund proceeds and no systematic evaluation and ongoing monitoring during implementation (beyond the MoI's management of the approval of FLCN allocations). The FLCN was essentially designed as a temporary response to a specific disaster, but continued to receive a MAD 200 million annual allocation from the national budget in 2013, 2014, and 2015. The Government has recognized the need and opportunity to transform the FLCN to improve ex ante risk reduction efforts in high risk areas rather than using it mainly as a vehicle for reactive disaster response. This requires fundamentally restructuring FLCN's goals and mode of operation, as well as increasing its transparency, including through specifying clear eligibility and selection criteria for rule-based selection of projects.[5]

5. In this context, the Government has decided that the newly re-designed FLCN will provide co-financing of, and technical capacity building support to, a number of risk reduction projects each year. It will specifically focus on eligible risk reduction activities that measurably reduce disaster losses and protect life and property. It will also provide operational tools, training and capacity building to those who implement programs to make their community safer. As such the emerging "national resilience fund" will complement ongoing risk management activities undertaken by the line Ministries and local governments with a more targeted approach, incentivizing additional risk management activities, focusing on a set of specific projects selected for their quality and impact and supported by a multi-stakeholder approach. It will in particular establish a more effective "bottom-up" process of preparing risk reduction projects—and help to put local governments in charge of risk management.

[4] A CAS in Morocco is a dedicated national budget instrument which allows for the allocation of resources earmarked for specific expenditures under the supervision of an "*ordonnateur*".

[5] These goals and some initial reform measures to be undertaken by the Government were identified as part of continued Technical Assistance provided by the World Bank in 2014 and early 2015; see: *CAS-FLCN. Eléments d'information pour la définition des axes prioritaires et des critères de sélection des projets soumis à financement, et mise en place opérationnelle*.

6. The Government seeks to institutionalize the improved governance of the redesigned FLCN by establishing a dedicated inter-ministerial Steering Committee comprised of key stakeholders across the Moroccan Government. The Steering Committee has de facto already been set up and met throughout 2015 but the GoM will in addition formalize the FLCN's new governance structure - as well as its revised strategic mandate – through a corresponding specification in the Budget Law and associated circulars. This will specify the membership of the Steering Committee to include—at the General Secretary levels—MoI (chair), MEF, Ministry of General Affairs and Governance (*Ministère des Affaires Générale et de la Gouvernance,* MAGG), the Ministry of Urban Planning and Territorial Development, etc. The Steering Committee will be supported by a Secretariat housed in the General Secretary's office of the MoI, in charge of managing the selection and M&E process as specified in paragraph 49 and detailed in the Program Operations Manual (POM) throughout implementation. The selection of disaster risk reduction projects will be conducted by a larger National Selection Commission composed of representatives from different line Ministries supported by technical experts, as needed.[6] The institutional reform agenda for the FLCN is explicitly designed to incorporate lessons of experience into the evolving risk management architecture of Morocco, including in terms of feeding into the development of a national disaster risk and resilience management strategy.

Subprogram Two: Scaling-up Disaster Risk Reduction Activities

7. The objective of the second Subprogram is to expand the number and range of risk reduction projects through incentive financing provided by the reformed FLCN for eligible structural and non-structural risk reduction projects. This financing would be provided as co-financing, solicited through annual "Call for Proposals" (CfP), to eligible subprojects proposed and implemented by line ministries, provincial and local governments, public agencies and/or State-owned Enterprises (SOEs). The Steering Committee can also directly provide co-financing under conditions specified in the POM outside of the CfP provided that it does not exceed 20 percent of the total amount of FLCN funds allocated to eligible sub-projects.

8. The Government launched its first CfP in February 2015 for the allocation of available FLCN funds at the time, based on initial eligibility and selection criteria, developed with World Bank support.[7] The objective was to establish a "proof of concept", including in terms of demonstrating demand for FLCN funding, with lessons to be incorporated and institutionalized in subsequent CfPs from 2016 onward. The first CfP generated 91 proposals (with a total investment volume in excess of MAD 3 billion) of which 23 were selected with a total co-financing by the FLCN of MAD 251 million and over MAD 1 billion in total investment. An encouraging element lies in the balanced portfolio of selected projects, with 17 from regional and local governments and some non-structural activities. There is also good geographical representation across the country, corresponding to the higher hazard locations as identified through MnhPRA. Finally, the CfP encouragement of local governments with more limited financial resurces to apply for funding by providing them a higher level of co-financing led to nine out of the 17 proposals from regional and local governments selected coming from such local governments. (see Annex 1).

9. Future CfPs will be governed by details specified in the POM, which includes templates for the application form (*Cahier des charges*) with updated eligibility and selection criterial. The eligibility criteria, which build on those used in the first CfP, are provided for illustrative purposes only and will be further specified in the POM. They would include the following: first, the proposal has to demonstrate the local exposure to a specific risk of natural disaster and to focus on one or both of the two priorities of the FLCN (i.e. the protection and security of the people and/or the protection of physical assets to reduce

[6] The National Selection Commission and Secretariat will be established by circulars issued by MoI.
[7] The CfP 2015 was for an existing FLCN allocation from Morocco's own financial resources.

economic losses). Second, the proposal can be for non-structural activities (e.g., risk assessment, risk awareness campaigns, and risk planning) or small structural investments, but cannot be for large structural investments that could have a negative impact on the population and the environment (see paragraphs 63 and 64 in section 4.C on social and environmental aspects of the PAD). Third, the proposal can only be submitted by a line ministry, provincial and local government and its affiliated bodies, public agency and/ or SOE.[8] Fourth, the proposal needs to demonstrate that the project will reduce exposure to natural disaster risk. The Steering Committee aims to particularly support sub-projects of local governments with more limited financial resources.[9]

10. The eligible applications will be ranked by the National Selection Commission according to specific selection criteria. Key indicative selection criteria (see Box 2) will be specified in detail in the POM and will include technical and financial feasibility, effectiveness, , and implementation capacity along all key dimensions, including environmental, social and fiduciary issues as well as the follow-up and treatment of beneficiaries' perspectives and grievances.

Box 2. Indicative Set of Selection Criteria for Co-Financing by the FLCN

For indicative purposes, selection criteria are shown below which build on the experience of the first CfP. The POM will specify measurable indicators which will be used as a filter for selecting projects:

Criterion 1: Disaster risk reduction objective and expected results are clearly defined (Relevance criterion). Indicators for this criterion verify that the main components of the project are fully focused on risk reduction and that results to be achieved by each activity are clearly defined.

Criterion 2: **A relevant and up-to-date technical study is available (Feasibility criterion).** This criteria focuses on a detailed review of the technical documentation of the application (is the documentation up to date, or older, is it focused on the proposed project or is it a broader study without direct link with the project?).

Criterion 3: Estimated costs are adequate and appropriately justified (Economic criterion). Indicators here verify unit costs according to pre-established references points. Standard economic rates such as return on investment, can be used for this criterion.

Criterion 4: Limited environmental and social impact, assessed according to a pre-established framework (Environmental and Social criterion). Assessment forms included in the Cahier des Charges and attached to the POM will allow to evaluate environmental and social criterion. Social indicators will also include aspects on citizen engagement in terms of the identification, design, and implementation of the project.

Criterion 5: A technical and financial partnership covering all needs of the subproject is clearly established (Technical and Financial Partnership criterion). These indicators will focus on quality of the proposed partnership, the mobilized financial contributions, and an assessment of implementing agencies and their partners' capacity to implement projects in line with the required social, environmental and fiduciary requirements.

11. In addition to improving the selection process, the second Subprogram will also include explicit emphasis on ensuring that the selected projects will be implemented so as to achieve the intended results. To that end the MoI together with the MEF will sign a Financing Agreement (FA) (*convention de financement*) with the implementing agencies and their partners which will specify all implementation requirements, including on social, environmental and fiduciary aspects. The FA will also specify the

[8] It cannot be led by individuals, NGOs or firms in the private sector. This eligibility criterion was included in the 2015 CfP under the Government program. In future CfPs, the Government may decide to open applications also to non-state actors (NGOs etc.).

[9] Details to be provided in the POM. For the 2015 CfP, smaller municipalities were defined as 35,000 inhabitants or less. This can be revisited during implementation in order to develop a better pro-poor measure (going beyond the size of the municipality which is a proxy).

reporting requirements to the Steering Committee which will form part of the M&E system to be introduced for the reformed FLCN. Implementation progress as well as results achieved by FLCN funded projects will be published on a dedicated page of the interactive website to ensure transparency and increase accountability.

12. Overall, Subprogram Two is expected to significantly increase the number and quality of Morocco's disaster risk reduction projects ranging from non-structural projects such as smaller projects on local planning, hazard and risk mapping, public education etc. and somewhat larger efforts such as emergency warning systems and small-scale flood protection works, to more major structural programs such as larger flood protection works and seismic retrofitting of critical facilities (e.g., schools, hospitals and city halls) etc.. The results from these projects will substantially contribute to the better protection of citizens against the impacts of natural hazard events – specifically, the potentially significant saving of lives as well a greatly reduced property and economic loss. Another important result will be increased risk management capacity of government at all levels.

Subprogram Three: Improving Disaster Risk Financing and Insurance

13. As part of an integrated DRM strategy, residual catastrophic risks that cannot be cost-effectively mitigated should be efficiently financed. The objectives of the third Subprogram are therefore to: (i) design and implement a national insurance program against natural disasters for homeowners and businesses; and (ii) design and implement a dedicated Solidarity Fund (*Fonds de solidarité contre les événements catastrophiques*, FSEC) to partially compensate uninsured households affected by catastrophic events.

14. The overall Moroccan insurance market is ranked the third largest within the Arab world, but almost no insurance currently exists against catastrophic risk. Large industrial and commercial firms can seek insurance coverage against catastrophe risks from their Moroccan insurers. Yet property catastrophic risk insurance (for houses and cars) is under-developed since insurers consider such risks uninsurable. This creates a situation where most people expect the government to intervene or assume they will have to handle their loss by themselves, which can create social tension in the aftermath of a disaster. When the government has provided post disaster compensation, it has typically been done on an ad hoc basis.

15. The Government has contemplated the introduction of a National Catastrophic Risk Insurance Program (*Regime de couverture des consequences d'événements catastrophiques*) to improve the financial resilience of Moroccan citizens at risk. The current draft law (*Projet de loi n. 110-14*), developed including based on input provided by the World Bank, builds on and improves the initial draft law (*Projet de loi n. 34-08*) first discussed in 2008. The draft law went through an extensive consultation process with the private sector, and especially the domestic insurance industry, led by the insurance supervisory authority (previously DAPS and now ACAPS). The draft law aims to compensate: (i) the victims who become permanently injured or die because of a catastrophe; and (ii) the destroyed assets, and especially private dwellings. This coverage would be provided through a dual program: (i) make mandatory a multi-hazard catastrophe extension of guarantee in property, automobile and third-party liability insurance policies with fixed tariffs; and (ii) establish a dedicated FSEC which would compensate uninsured victims, including poor households who cannot afford insurance. The insurance pillar of the program would follow international good practices.

16. The draft law designs a dual system to provide (basic) coverage against (natural and man-made) catastrophic events for both insured and uninsured households. In particular, the draft law entitles poor households (who are mainly uninsured) to receive (limited) financial compensation from the FSEC for personal injuries (including permanent disability and death), and loss of principal residence and loss of use of principal residence caused by catastrophic events. While this compensation scheme is not designed

to cover all personal injuries and property losses, it offers a basic coverage which allows the affected poor households to obtain compensation for individual permanent disability/death and loss of principal residence (when this residence is inhabitable). This program is pro-poor as it creates a legal framework that gives affected poor households the right to receive financial compensation in case of a catastrophe. Most developing countries, including Turkey where catastrophic risk insurance is well developed through the Turkish Catastrophe Risk Insurance Pool, tend to support affected poor households through ad-hoc financial program, where the affected households do not know in advance if they will be compensated. This uncertainly contributes to their low resilience to disasters.

Box 3. National Catastrophic Risk Insurance Program

The catastrophe risk insurance draft law aims to improve the financial resilience of Morocco through a dual scheme founded on market-based insurance and solidarity principles. The draft law aims to cover (i) victims with bodily injury resulting to permanent disability or death and (ii) assets affected by natural and man-made disasters. The draft law modifies the current Insurance Law (n.17-99) and makes the multi-hazard (natural and man-made) catastrophe extension of guarantee mandatory in all property insurance policies, motor third party liability insurance policies, and third-party liability insurance policies. This means that any insured property is automatically covered against natural and man-made catastrophes. This also means that through the mandatory extension of the catastrophic risk insurance guarantee under the motor third party liability insurance that covers the vehicle owner and his/her family, the draft law will provide compensation for permanent disability/death to more than 6 million people or at least 18 percent of the population of Morocco. This compulsory guarantee will be financed through an additional insurance premium on the above-mentioned insurance policies, to be fixed by decree. The draft law also establishes the FSEC as a legal entity. The FSEC aims to compensate non-insured households against loss of principal residence that becomes inhabitable, loss of use of the principal residence, and personal injuries (permanent disability and death) in case of a disaster. The FSEC would be mainly funded through (i) initial contribution as set in the government budget law and (ii) additional taxes as set by decree. These taxes represent the contributions of the policyholders and the insurers.

17. The draft law brings in the private insurance sector. The proposed catastrophic risk insurance program is co-financed with the private sector through a public-private partnership to effectively share catastrophe risks. It relies on the financial capacity of the domestic insurance industry backed by the international reinsurance markets to finance catastrophe losses of insured assets and individuals, financed through additional (mandatory) insurance premiums. In order to make this additional premium affordable for the policyholders and to protect the private insurance industry against major catastrophe losses, the draft law sets a system of maximum aggregate insurance payouts beyond which insurance payouts would be prorated. The draft law also includes a public guarantee against default risk of international reinsurers. It proposes an innovative combination of market-based catastrophic risk insurance (through mandatory guarantee within property insurance, automobile liability insurance, and third party liability insurance policies) and dedicated solidarity-based compensation system through the FSEC. The draft law aims to increase the number of residential, commercial, and industrial properties insured against catastrophes, but this increase would still be limited in the first years as the property insurance penetration is still relatively low in Morocco. It is estimated that less than 5 percent of residential dwellings have property insurance. In addition, through the mandatory extension of guarantee under motor third party liability insurance, all vehicle owners and their family members would be automatically covered against personal injury (resulting into permanent disability or death), which means that about 6 million people in Morocco would be compensated for disability and death caused by disasters.

Program Development Objective and Key Results

18. The program development objective (PDO) is to improve the institutional framework to finance disaster risk reduction activities and strengthen financial resilience to natural disasters for targeted populations in the Program Area.

PforR Program Scope

19. The "PforR" Program (the "Program") is defined by: (i) the Program duration; (ii) the Program area; and (iii) the Program activities supported.

20. **Program duration:** The Program will be implemented over five years from April 2016 to December 2021.

21. **Program area:** The Program will include the following geographic areas: the regions of Tanger-Tétouan-Al Hoceima, l'Oriental, Fès-Meknès, Rabat-Salé-Kénitra, Béni-Mellal-Khénifra, Casablanca-Settat, Marrakech-Safi, Draâ-Tafilalet, Souss-Massa, and the provinces of Guelmim, Tan-Tan, and Sidi-Ifni.

22. **Program activities:** The Government requested support for all three Subprograms of the Government program. The specific Program activities will be:

- **Subprogram One: Promoting Institutional Reform and Capacity Building.** Strengthening the existing institutional DRM structure through the following:
  - Establishment of an improved governance structure for the FLCN, including the establishment of the Steering Committee, the National Selection Commission and the Secretariat;
  - Establishment of a transparent and results focused process for the allocation of FLCN resources for the financing of Eligible Subprojects, as well as a M&E system for the Eligible Subprojects funded by FLCN;
  - Capacity building for improved DRM for line Ministries, local governments, public agencies, and state owned enterprises in the Program Area; and
  - Development of a national integrated disaster risk and resilience management strategy.
- **Subprogram Two: Scaling up Disaster Risk Reduction Activities.** Carrying out of Eligible Subprojects to be financed by FLCN and relevant Ministries, local governments and public agencies or state-owned enterprises.
- **Subprogram Three: Improving Disaster Risk Financing and Insurance.** Designing and implementing a national insurance program against catastrophic events for homeowners and businesses, and establishing the FSEC, a dedicated solidarity fund to compensate uninsured households affected by catastrophic events.

23. **Exclusions.** The Program would exclude reconstruction projects after a disaster event and those that do not meet World Bank policies for eligibility for PforR financing. Specifically, the Program will not include any activities assessed to have significant adverse impacts on the environment and/or affected people, as defined in the Bank Policy and Directive on PforR Financing, nor procurement of works,

goods, and services under high-value contracts above the Operations Procurement Review Committee thresholds.

24. The relationship between the Government program and the Program for the operation is shown in Table 1 below with the grey shaded areas highlighting the Program.

Table 1. Government Program and the Program (in grey)

<table>
<tr><th colspan="3">Subprogram One: Promoting Institutional Development and Capacity Building</th></tr>
<tr><td>Establishment of an improved governance structure for the FLCN, including the establishment of a Steering Committee, National Selection Commission and Secretariat;

Establishment of a transparent and results focused process for the allocation of FLCN resources for the financing of Eligible Subprojects, as well as of a M&E system for the Eligible Subprojects funded by FLCN;

Capacity building for an improved DRM for line Ministries, local governments, public agencies, and state owned enterprises;

Development of a national integrated disaster risk and resilience management strategy.</td><td>Program Area</td><td>Non-Program Area</td></tr>
<tr><th colspan="3">Subprogram Two: Scaling up Disaster Risk Reduction Activities</th></tr>
<tr><td>Eligible Subprojects to be financed by FLCN and relevant Ministries, local governments and public agencies or state-owned enterprises.</td><td colspan="2">Post disaster event reconstruction activities financed by the FLCN;

Activities that have a significant adverse impact on the environment and/or affected people and high value contracts, as defined in the Bank Policy and Directives on PforR Financing.</td></tr>
<tr><th colspan="3">Subprogram Three: Improving Disaster Risk Financing and Insurance</th></tr>
<tr><td>Designing and implementing a national insurance program against catastrophic events for homeowners and businesses, and establishing the FSEC, a dedicated solidarity fund to compensate uninsured households affected by catastrophic events.</td><td>Program Area</td><td>Non-Program Area</td></tr>
</table>

C. Program Strategic Relevance

Morocco's emerging approach to managing risks and resilience

25. **Starting in 2008, the Government of Morocco has begun to explore options for managing a variety of risks the country is facing in a more strategic and integrated manner**. Supported by the World Bank through a series of Technical Assistance programs, the Government has looked at multiple risks, including i) natural disasters, ii) commodity (energy) price volatility risk, and iii) risk in the agricultural sector. The outcome of this Technical Assistance is summarized in the 2013 World Bank Publication "*Building Morocco's Resilience: Inputs for an Integrated Risk Management Strategy*"[10] which highlighted disaster risk as a particular concern. The Government decided to focus on disaster risk management as a priority and as the focus of the new lending operation, so as to start with a sub-set of

[10] World Bank Group (2013). Building Morocco's Resilience: Inputs for an Integrated Risk Management Strategy.

risks and enact concrete institutional reform changes and risk and vulnerability reduction results on the ground. This more focused engagement aims at providing the basis for a changed operational approach in Morocco to managing risks in a more integrated manner - but starting with a specific sub-set of risks first - in line with the recommendations of the 2014 World Development Report on “Risk and Opportunity”. The choice of focusing on natural disasters has also been driven by an increasing recognition of the social tensions that have and may continue to surface in affected and non-affected areas, in addition to the fact that natural disasters had been one risk area that has been least understood or proactively managed in recent years, despite a series of disasters that have hit the country. The recent 2014 floods in south Morocco that were managed not pro-actively enough and delays in the rescue and relief actions were partly due to the high fragmentation of the governance structures and the weak inter-agency coordination.

Human and physical exposure to natural disasters

26. **Morocco remains vulnerable to a diverse set of natural hazards which are being exacerbated by climate change and rapid urbanization**. The most frequent hazards in Morocco are flood and drought – flooding in late 2014 in the south of the country caused over $100 million in damage, and floods in Tangier (2008) and Al Gharb (2009) caused significant economic loss and asset destruction[11]. Frequent disasters such as flood and drought are a burden to economic development and can drive victims into poverty. Less frequent but more severe earthquakes have the potential to significantly impact Morocco’s budget and cause widespread suffering. The potential for catastrophic earthquakes in Morocco is significant – the 1960 Agadir earthquake, although extremely small by earthquake standards (magnitude M_w 5.8) caused deaths of over 12,000 Moroccans and left many others homeless, as well as causing major loss of property and livelihoods. The Al-Hoceima earthquake of 2004 killed over 600 people and injured over 1,000, left many homeless and completely destroyed many assets. Morocco lies on the Africa-Eurasia plate boundary, so that the North and in general the region of the Atlas mountains have high seismic risk – several of Morocco’s major cities, including Fes, Meknes and Tangier, are highly vulnerable to earthquake.

27. **The impact of natural hazards is exacerbated by climate change and rapid urbanization**. Morocco, as other countries in the region, will be affected by climate change at both the 2°C and 4°C warming levels, particularly due to increased projected heat extremes and reduction of water availability. In a plus 2°C world, heat extremes will occur in about 30 percent of summer months almost everywhere in the Middle East and North Africa (MENA) region and a 35 cm sea-level rise is projected, for example, for Tangier on Morocco’s Atlantic coast.[12] Out of a total population of 32 million, currently 18 million live in urban areas, and it is anticipated that the urban population will increase by over 4 million by 2030. Urbanization, a compounding factor of vulnerability, would increase the exposure of people and economic assets to disaster events, especially in coastal areas where the largest cities and economic assets are located. For example, Casablanca, Morocco’s largest city in the country and currently home to 3.3 million people, is expected to grow by more than 50% to reach over 5 million residents by 2030 with some of the urban growth expected to occur in more risk-prone areas. The city is already highly vulnerable to flooding, coastal erosion, and marine inundation and its vulnerability will only become more pronounced in the years leading up to 2030.

28. **Morocco has quantified its exposure to its most important natural hazards**. As part of the Technical Assistance program, a probabilistic risk assessment, i.e., *Morocco Natural Hazards Probabilistic Risk Assessment* (MnhPRA), was developed and employed to analyze earthquake, flood, tsunami, drought and landslide risk. For a total exposure of MAD 2.7 trillion (or equivalently about MAD 90,000 per capita), average annual loss (AAL) due to natural hazards is estimated to be MAD 7.8 billion

[11] TARGA-AIDE, & Zurich Insurance. (2014). *Risk Nexus Morocco floods of 2014 : what we can learn from Guelmim and Sidi Ifni*. Zurich.
[12] World Bank Group (2014): Turn Down the Heat: Confronting the New Climate Normal.

as shown in Table 2. Based on probabilistic analyses, over the next 30 years there is a 95 percent chance of having an earthquake or flood causing losses amounting to MAD 5 billion or greater, a 90 percent chance of having an event causing losses of MAD 10 billion or greater and a 65 percent chance of having an event causing losses of about MAD 25 billion or greater.

Table 2: Natural Hazards estimated losses for varying return periods (MAD millions)[13]

Hazard	Exposure	AAL	Loss Cost	Return Period (years) *Very Probable → Probable → Possible*				
				20	50	100	500	1000
Earthquake	2,700,000	850	0.0003	4,523	9,570	15,317	35,800	47,000
Flood	2,700,000	4,177	0.0016	22,275	26,161	27,556	29,717	34,100
Tsunami	2,700,000	125	0.00005	2	3	404	28,013	58,852
Drought (3 crops only)		2,696	na	15,678	16,638	17,367	18,035	na
Sum		7,848	*not directly additive*					

Sources: World Bank Group. 2013. *Building Morocco's Resilience: Inputs for an Integrated Risk Management Strategy*.

29. **Table 2 also shows the estimated impacts for disaster scenario,** which range from "Very Probable" to "Probable", "Possible" and "Rare but Possible" events. These levels represent scenarios the government should prepare for or at least consider:

- "*Very Probable"* corresponds to events occurring every few decades.
- A "*Probable"* corresponds to a "1 in 100 years" event, which should not be misunderstood – in actuality, it can occur at any time, and has a probability of 0.01 (1/100) of occurring in any year. Despite being seemingly rare, such events seem to occur all too frequently. Buildings, bridges and other infrastructure are quite likely to experience Probable events during their design life and are in fact typically designed for these (and somewhat larger) events, although older infrastructure often has not been so designed and may require retrofitting. Fiscal, economic and emergency planning similarly has to be able to respond to Probable events.
- "*Possible"* corresponds to a "1 in 1000 years" probability of occurrence – infrastructure may often survive such events although with major damage, and fiscal, economic and emergency planning should at least consider such events.
- Lastly, "*Rare but Possible"* corresponds to a "1 in 10,000 years" (not shown in Table 2 above) probability of occurrence – infrastructure will be heavily damaged by such events, and fiscal, economic and emergency planning often overwhelmed. While difficult to fully prepare for such events, they should at least be considered.

30. In the last few years, the Pakistan (2005), Wenchuan (2008) and Haiti (2010) earthquakes, the Indian Ocean (2004) and Japan (2011) tsunamis, tropical cyclones Nargis in Myanmar (2008), Sandy in New York (2012), and the Thai floods (2011) were all somewhere in the range of Probable to Possible. A large earthquake in, for example, Fes has the potential for tens of thousands of fatalities and significant economic loss.

31. **These hazards, however, vary in their impact on sectors and parts of the country**. Sectoral breakdown of losses are not uniformly distributed across Morocco:

[13] Total Exposure Value Buildings and Infrastructure (MAD millions); AAL = Average Annual Loss (MAD millions); Loss Cost = AAL / Total Exposure.

- *Earthquake hazard* is concentrated primarily in the north of Morocco and, to a lesser extent, on a line running through Fez and Marrakech to Agadir. Five provinces (Nador, Al-Hoceima, Berkane, Taza, Tetouan) representing 8 percent of the total national building exposure have an earthquake Average Annual Loss (AAL)[14] of 34 percent of the national building earthquake AAL. This means that on average, for buildings only, 8 percent of the building exposure contributes 34 percent of the earthquake potential loss. Clearly, if the risk of 8 percent of Morocco's buildings can be reduced, Morocco's overall earthquake risk can be significantly decreased.
- *Floods* are a chronic problem for Morocco and on average cause significantly more damage than earthquakes, with a total AAL of MAD 4.2 billion. While flood risk affects most parts of Morocco, MnhPRA identified that four provinces (Kenitra, Tetouan, Casablanca and Sidi Kacem) contribute 60 percent of the total building flood risk.
- *Droughts* MnhPRA estimated AAL for cereal production due to drought to be approximately MAD 2.7 Billion. Ninety percent of Moroccan agriculture is traditional and dependent on rain, and is highly vulnerable to not only droughts and floods but also pests and diseases. The three regions most exposed are Sousse-Massa-Draa, Meknes, and Marrakech-Tensift. Overall, it is estimated that the total exposure of the cereral portion of the agriculture sector to various risks was MAD 75 billion in 2008, increasing to MAD 185 billion in 2020.

Poverty reduction and shared prosperity relevance

32. **Reducing the impact of natural hazards is of central importance for sustained improvements in poverty reduction and shared prosperity**. The Program's focus on support for preventative risk reduction actions will significantly benefit poor and vulnerable populations, not only through direct loss reduction but through higher investments by firms and households given a lower potential for disasters. Evidence suggests, that in the presence of unmanaged risk, poor and low-income households tend to under-invest in productive assets (e.g., farmers plant low-return, low-risk crops). Proactive disaster risk management (i.e., weather stations, early warning systems, etc.) can therefore incentivize more productive investments. Furthermore, analyses suggest the vulnerability (defined as the potential damage to housing stock due to flood events) of the assets of the poor (where poor is defined as the bottom 20%) is 69% higher than the vulnerability of the assets of the non-poor.[15] Reducing the vulnerability of the poor's assets has therefore a much greater relative benefit and can also speed up recovery since productive assets remain intact. Morocco's approach to disaster risk insurance, especially by establishing a Solidarity Fund FSEC for uninsured people is also important. Since poor and low-income households have higher vulnerability and less ability to smooth economic shocks due to less access to financing (including insurance), government support is necessary after a disaster event. Evidence from flood and drought in a variety of contexts suggest that poor households reduce consumption after a disaster, for example by reducing food in-take and taking children out of school. These hardship measures have long-term implications for human capital, especially for children, and worsen intergenerational poverty. Having the FSEC in place will allow poor households to receive support sooner, easing hardship significantly. Evidence from ex-post surveys of floods and droughts also suggest disbursing payments soon after a disaster substantially reduces overall disaster losses.

[14] Average Annual Loss (AAL), is the sum of losses anticipated over some long-term future period (e.g., the next 100 years) divided by the length of that period. More specifically, it is the frequency-weighted mean of all future losses.
[15] World Bank (2015) (Draft): Socio-economic resilience to floods in 90 countries.

D. Technical Soundness

Program ownership, focus and design

33. **The Program is based on strong government ownership, technically sound and fully aligned with international best practices.** The Program directly responds to the Government of Morocco's request to support the implementation of an improved approach to managing risks and resilience. The Program conforms to core principles for effective disaster risk management, including: moving from a culture of post disaster response and fragmented and sector based in inventions to a more proactive and ex-ante focus on risk prevention; targeting local action by having local communities be increasingly responsible for disaster risk management, including for prevention; and providing improved risk governance structures and incentives to catalyze new and scaled-up risk reduction activities. In Morocco's case, specific attention has been paid to target increased disaster risk management at the local level as well as to ensure a good balance between structural and non-structural measures, reflecting the fact that non-structural measures are oftentimes particularly impactful and cost effective. The Program also contains a clear emphasis on better using risk analytics by building on and mainstreaming the use of Morocco's disaster risk modeling capability. Risk institutional reform and reduction activities are also complemented by a specific Sub-program dedicated to disaster risk insurance to ensure that residual risks that cannot be cost-effectively mitigated be efficiently financed, including through the establishment of the FSEC.

34. **For Sub-programs One and Two, the Program adopts international practices to the specific country circumstances in Morocco, including in terms of the redesign of the FLCN.** The proposed redesign of the FLCN follows international practices in countries, including from Mexico, Indonesia, France and the United States, which have put in place mechanisms to promote ex-ante risk reduction investments. These good practices include the following parameters: clarify that the FLCN does not aim at financing large-scale infrastructure projects nor should its resources be used to pay a large portion of the losses after a disaster; the FLCN embraces co-financing instead of full financial support as its modus operandi in order to increase overall ownership of project implementing agencies and scale up risk reduction investments; the FLCN has a transparent organizational design combining different ministries and levels of governments; selection of projects funded by the FLCN is based on transparent selection criteria; no member can evaluate a project if there is a conflict of interest; both non-structural and structural risk reduction activities are supported; support is provided for both national public entities and local communities; there is a dedicated effort to help small/ more vulnerable communities; there is an audit process in place, for technical and fiduciary aspects; the identity of those who receive funding, the nature of their project and level of funding is also made public. More broadly, linking the work on disaster risk management to a broader risk and resilience management approach, the Program also is in line with emerging best practices on "resilience" as, for example, articulated in the 2014 World Development Report on "Risk and Opportunity".

35. **The establishment of the catastrophic risk insurance program under Sub-Program Three, which relies on a public private partnership and the establishment of the FSEC is innovative.** The Program builds on previous catastrophic risk insurance programs supported by the World Bank, such as the Turkish Catastrophe Insurance Pool, the Mongolia Index Based Livestock Insurance Project, the Romanian Catastrophe Risk Insurance Pool, and the Southeast Europe and Caucasus Regional Catastrophe Risk Insurance Facility. These programs have demonstrated that public-private partnerships can enable the development of sustainable, competitive domestic catastrophic risk insurance markets and allow for cost-effective catastrophe risk transfer from homeowners and enterprises to the private insurance and reinsurance markets. The development of such domestic markets is usually hampered by (i) limited good-quality data, catastrophe risk models and specialized technical expertise for the development

of actuarially sound catastrophic risk insurance products; (ii) lack of production systems (pricing, underwriting, claims settlement, risk management and reinsurance operations) to support catastrophic risk insurance products, which require major investments for insurers which are often not justified given the current low volume of catastrophe insurance business; (iii) lack of risk-based regulatory requirements, leading insurers to engage in unsustainable price competition that is not compatible with the inherent risk of this business; (iv) lack of consumer awareness of their own disaster risk exposures and/or insurance products that can help them mitigate those risks; Governments often play the role of reinsurers of last resort by providing ad hoc financial assistance to homeowners and businesses in the aftermath of natural disasters thus creating wide-spread expectations of government assistance and weakening consumers' interest in catastrophe insurance. All these issues are addressed in the design of the catastrophic risk insurance program.

35. The Program can also build on strong risk analytics which have been applied during the preparation process. A guiding principle of modern management is "what gets measured gets managed." An important element of the Government of Morocco's disaster risk management program has been the development of MnhPRA, a Geographic Information System (GIS) based software package that builds an inventory of the country's assets at risk and the hazards that threaten these assets, and allows analysis to estimate the impacts of these hazards on the assets. MnhPRA thus permits measurement of disaster risk, a key step towards managing that risk. For example, applying MnhPRA to the identified FLCN co-financed projects during the 2015 CfP shows that approximately 73% of the project funding is allocated to flood risk reduction activities, and 27% to geohazards (i.e., earthquake and landslide) risk reduction activities. This distribution seems reasonable given that floods are frequent occurrences in Morocco, and have affected more than 10 times as much of the population as geohazards, see. The geographical distribution of projects, especially flood related projects, also seems reasonable which overlays the local government projects on the major river systems and earthquake hazard of Morocco. While geohazards are only addressed by two projects, one of these projects is in Agadir, where over 12,000 were killed in an earthquake in 1960, and the other in Al Hoceima, with hundreds of deaths in the 2004 earthquake. MnhPRA will be further developed so that it can be used to more proactive identify risk reduction options in "disaster risk hotspots" and also in the evaluation of the FLCN co-financed projects. In terms of disaster risk insurance, MnhPRA is being used to inform the government on the financial and fiscal implications of the proposed catastrophe risk insurance law. In particular, it can help MEF and ACAPS set the additional catastrophe insurance premium to finance the compulsory extension of guarantee, and define the financial strategy of the FSEC. Preliminary actuarial analysis of the World Bank shows that the average annual disaster loss (earthquakes and floods) is estimated at MAD 700 million for the compulsory cat risk insurance program and at MAD 800 million for the FSEC.[16]

Program Institutional Framework and Sustainability

Overall Program Management

36. **The Program builds on strong Government ownership and at its core is being managed by two established and high capacity institutions: the MoI and the MEF**. For the improved governance of the FLCN, a Steering Committee will formally be established and will be presided over by the General Secretary of MoI and include the MEF, MAGG, and the Ministry of Urban and Territorial Planning etc., with representatives at the General Secretary level, see the following table (to be extended to other Ministries over time). The Steering Committee will set the strategic direction for Morocco's risk management policies as they relate to the use of the FLCN. Specifically, key functions will include: i) setting the strategic direction for the FLCN; ii) defining and reviewing the selection eligibility criteria for the sub-projects to be co-financed by FLCN; iii) providing a sounding board for Line Ministries' and

[16] Those estimates are sensitive to multiple assumptions. They are being refined with MEF and ACAPS.

local government priorities for the eligible sub-projects; iv) monitoring and evaluating the results of eligible sub-projects in the Program Area; and v) overseeing and providing guidance to both the National Selection Commission and the Secretariat.

37. A **National Selection Commission** will also be formally established to manage the transparent selection of FLCN co-financed projects. The Commission will operate under the guidance of the Steering Committee and include, among others, representatives from the relevant ministries and public agencies, including MoI, MEF, MAGG, the Ministry of Urbanism and Territorial Planning, the Ministry of Energy, Mining, Water and Environment, the Ministry of Agriculture, the Ministry of Transport and Equipment, as well as any other Ministry, Department, Public Agencies related to the FLCN mandate. Experts from leading research institutions can also be appointed to this commission if they can provide specific expertise helping with the evaluation of the applications (e.g. structural engineers, flood specialists, economists, etc.). Technical experts can also support the National Selection Commission. The Commission will assure that there is no conflict of interest for the members of this Commission to evaluate a specific application

38. A **Secretariat** will be created to support the work of the Steering Committee and the National Selection Commission and will be established at the office of the General Secretary of the MoI. The Secretariat will be responsible for day to day coordination and management of the Program in line with the Program Operations Manual and also serve as the Bank's interface for the Program. The Secretariat will also be in charge of preparing the Annual Program Reports. The Secretariat will be supported by an international expert mobilized and financed by the Swiss Development Cooperation (SDC) and additional support may be provided, as needed, by qualified consultants to ensure that the Program will be implemented in line with the requirements of the POM. The Secretariat, together with the Steering Committee and National Selection Commission, will also provide oversight on the FLCN-funded projects, in particular by assessing at the selection stage, the capacity of implementing agencies and their partners to carry out the project so that they can achieve intended results, and by supporting, as needed, implementing agencies and their partners during the implementation through targeted capacity building.

Table 3: Program's Main Stakeholders and Role in Program Implementation

Institution		Role Played in Program Implementation
MoI	General Secretariat	Responsible for the provision of strategic guidance for the Program, Head of Steering Committee, *Ordonnateur* of the FLCN, Responsible for the Secretariat
		Secretariat: Day to day management of the Program; support to Steering Committee and National Selection Commission
	IGAT	Responsible for (i) technical audit of participating Program Entities, and (ii) independent verification of DLIs 1-6
	DAA	Support to Secretariat on fiduciary management aspects
MEF	General Secretariat	Member of Steering Committee
	Budget Department	In charge of Program budgeting
	General Inspectorate of Finance	Responsible for audits of the Program Financial Statements
	Internal Audi Service of the Department of Treasury and External Finances	Responsible for the independent verification of DLIs 7 and 8
	Insurance Supervisor[17]	Technical leader of the National Catastrophic Risk Insurance Program

[17] MEF/ACAPS (since effectiveness of the Law 64-12 concerning the creation of ACAPS).

MAGG	General Secretariat	Member of Steering Committee
Ministry of Urban and Territorial Planning	Directorate of Urban Planning	Member of Steering Committee
Courts of Accounts (incl. at the regional level)		In charge of external audit of public entities and local governments
Procurement Control Commission		In charge of handling the Program's public procurement complaints
Central Body for the Prevention of Corruption		In charge of investigating the Program's fraud and corruption complaints
Line Ministries, Local Governments, Public Agencies, and State-owned Enterprises		In charge of implementing FLCN co-financed projects, incl. mobilizing co-financing, contract management and procurement, and monitoring and reporting on project progress.
Water Basin Agencies		In charge of technical studies related to water/ flood protection projects

39. The Borrower will have the Program Financial Statements audited. The stakeholders involved in the Program will each prepared the required Financial Statements for the audit.

40. The implementation of **Subprogram Three** (Improving Disaster Risk Financing and Insurance) falls within this overall framework and the MEF is a core member of the Steering Committee. In addition, the MEF is the technical leader in the development of the draft catastrophic risk insurance law and, based on the proposal made by ACAPS, it will draft the implementation legal documents. The draft law establishes a Committee of catastrophic events (*Commission de suivi des évènements catastrophiques*). Its mandate is to collect information following the occurrence of a disaster, to propose whether this disaster should be declared as a catastrophic event, to propose the declaration of state of calamity and to assist the FSEC in the evaluation of the damage of non-insured victims. The draft law also establishes the FSEC as a legal entity. The FSEC will be managed by a Board chaired by the Prime Minister (or delegated authority) and with representatives of public agencies (including ACAPS) and insurance/ reinsurance industry. The draft catastrophic risk insurance law, including the establishment of the FSEC, builds on solid institutions: ACAPS, MEF and the Central Reinsurance Company (*Société Centrale de Reassurance*). The Central Reinsurance Company has been the national reinsurer since 1960, benefits from a state guarantee, has good financial strength (rated BB+ by Moody's), and serves Morocco's rapidly growing private insurance market. The Government has been working towards a catastrophic risk insurance program for the past decade with technical assistance from the World Bank.[18] The ACAPS has the technical capacity to assist in the implementation of the catastrophic risk insurance law, especially the insurance component. In addition, the ACAPS would continue to provide advisory services (including actuarial support) to contribute to the preparation of the implementation legal documents of the draft law. Grants have already been mobilized to assist ACAPS. Previous drafts of the law faced technical challenges and legislative hurdles. The revised draft law, which has been revised by the ACAPS and discussed with the private insurance sector in collaboration with the Word Bank, is scheduled to be submitted to the *Conseil du Gouvernement* and then to the Parliament in 2017. Its implementation will constitute a major shift toward ex ante financial management of disasters, although strong political commitment and technical and operational support will still be required.

Implementation Level

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[18] The World Bank, with funding from FIRST Initiatives, provided the DAPS with technical assistance to assess the financial sustainability of the proposed program, including the actuarial methodology to set the additional cat risk insurance premium. Some of its recommendations (such as defined list of insurable perils and specific maximum coverage for industrial assets, increased role of the private domestic insurance sector) has been adopted in the revised draft law.

41. **Implementation of activities** that are co-funded by the FLCN will be the responsibility of the concerned line Ministries, provincial and local governments, public agencies and/ or State-owned Enterprises. Implementation responsibility will cover all project management dimensions, mobilizing co-financing, procurement, contract management, management of environmental and social aspects, and monitoring and reporting on project progress. The *Ordonnateur* of the FLCN, the General Secretary of the MoI, together with the MEF, will sign a Financing Agreement (FA) (*convention de financement*) with each implementing agency and their partners to ensure that projects will be implemented so as to achieve their intended objectives and meet the requirements specified in the Program Operations Manual. The Secretariat, supported as needed by qualified consultants, will also ensure compliance with the provisions of the FA.

42. At the *national level*, the likely implementing agencies and their partners for structural and non-structural investments will include the Ministry of Urban and Territorial Planning, the Ministry of Equipment, Transport and Logistics, the Ministry of Agriculture, the Ministry of Energy, Water, and Environment, and to some extent the Ministries of Health and Education (i.e., for building retrofits). It could also include public agencies such as the National Institute of Geophysics and National Centre for Scientific and Technical Research (CRNST) or the High Commission for Water and Forest, and the National Meteorological Office. All these agencies are well qualified and experienced in their respective domains technically. The review of the proposals under the first CfP reflected the likelihood that these ministries and agencies will bring forward the bulk of the national level projects.

43. At the *sub-national level*, the likely implementation agencies will be Provincial Authorities or Municipalities with varying degrees of technical capacities. During preparation a sample of local governments was assessed, in particular in terms of their ability to implement the proposed sub-projects based on the projects received under the first CfP. A large number of sub-projects was in the area of small scale flood protection works. These have been prepared by the sampled local governments jointly with the Moroccan Water Basin Agencies (ABH, *Agence du Basin Hydraulique*), which are responsible for flood protection works in various river basins of Morocco. Morocco's ABHs are well recognized for their technical expertise in the area of flood control, with extensive experience in the design and construction of flood control structures. Overall, there are nine ABHs in Morocco with detailed knowledge and experience in their respective river basins.[19]

44. Nevertheless, given the varying level of technical capacity of some of the potential implementing agencies and their agencies, especially at the sub-national level, the Program will be designed to screen at project selection for more complex projects and/ or weaker implementation capacities and establish a dedicated capacity building program where needed, including through the mobilization of additional consultants to support the implementation of sub-programs.

45. Program is also designed to include **technical audits**. As part of its role as the Independent Verification Agent, the General Inspectorate of Territorial Administration (*IGAT*, i.e. *Inspection Générale de l'Administration Territoriale*) will conduct technical audits to ensure that projects are implemented according to required standards. IGAT has significant experience of conducting technical audits, in particular at the sub-national level, based on qualified staff of engineers and other professionals who routinely provide independent quality assurance review processes for the MoI.

E. Program Expenditure Framework and Financial Sustainability

[19] ABH Loukkos (Tétouan), ABH Tensift (Marrakech), ABH Guir-Ghris Ziz (Errachidia), ABH Oum Er Rbia (Beni Mellal), ABH Sakia El Hamra-Oued Eddahab (Laayoune), ABH Sébou (Fès), ABH Bouregreg (Ben Slimane), ABH Moulouya (Oujda), ABH Souss Massa (Agadir).

46. **The latest comprehensive assessment of Public Financial Management (PFM) systems in Morocco was published in 2009 (Public Expenditure and Financial Accountability (PEFA) assessment) and concluded that "the credibility of the budget is rated good overall".** Payment arrears have ceased to be substantial. In terms of comprehensiveness and transparency, detailed fiscal and budget information is accessible to the public, including from the websites of the MEF and Parliament. Most funds transfers to regional and local governments are governed and effected through transparent arrangements and following defined rules. However, certain gaps need to be closed in the provision of information about programs financed by international donors and the consolidation of administrative budget data, and there are lags in the financial reporting on public enterprises. The process of preparing the annual budget is orderly and well established and gives the technical ministries adequate time to participate in the drafting of the budget estimates within the timeframe required for Government's submission of the budget to Parliament. Predictability of budget execution is satisfactory and arrangements for monitoring flow of funds are ensured. Government ministries, departments and agencies are fully capable of planning their expenditures, even though major in-year adjustments to budget allocations are frequently made due to changes in revenue available for supplementary appropriations (*fonds de concours*). Control and audit were found to be good overall for procurement and payroll, especially given plans to systematically increase scheduling of joint audit work by ministerial audit departments and the MEF's Inspector General's team in order to better detect any flaws in control systems. The Court of Accounts (*Cour des comptes*) is fully engaged in its role as external auditor of the management and use of public funds. The frequency and scope of its audits, which are steadily increasing, are rated average, as is follow-up of their recommendations. The review of the budget law (*loi de finances*) by the two houses of Parliament is clearly defined in the Constitution and the Government follows these procedures. Many detailed reports are annexed to the budget law and supplemented as required, by written responses from the technical ministries to questions posed by members of Parliament and by the parliamentary finance commissions.

47. **Morocco is also undertaking an important budget reform to improve the transparency and effectiveness of public expenditure management at the central and local level**. While budget classification at the level of central government is aligned with international norms[20], Morocco does not yet publish a multiannual budget framework, which is foreseen in the Organic Budget Law reform. The current reform aims to achieve this objective through the adoption of a programmatic budget structure and performance objectives and indicators. The swift implementation of this reform would increase the consistency between the budget and the government's priorities. Transfers to agencies and local governments are currently recorded but not their own revenues in the absence of consolidated accounts.

48. **The Program's financial sustainability and funding predictability at the central level do not pose a risk**. The analysis recently carried out by the Bank on Morocco indicates that the public debt and external debt sustainability framework at the central level remains sustainable although it would weaken under scenarios of medium term downside risks. Indeed, when the debt sustainability analysis is based on alternative scenarios, the debt stock remained high over the period 2014-2020. All the six bound tests[21] proved sustainable for the central government debt over the medium term, as well as the five external debt tests. Morocco has also demonstrated its willingness and capability to adjust policies and introduce corrective measures to overcome the adverse effects of shocks. Morocco managed to keep its investment grade rating and its access to international financial markets with relatively favorable conditions. The

[20] COFOG (Classification of the Functions of Government) developed by the OCDE

[21] The Scenarios are as follows: B1: Real interest rate is at baseline plus one standard deviations; B2: Real GDP growth is at baseline minus one-half standard deviation; B3: Primary balance is at baseline minus one-half standard deviation; B4: Combination of B1-B3 using one-quarter standard deviation shocks; B5: One time 30 percent real depreciation in 2015; and B6: 10 percent of GDP increase in other debt-creating flows in 2014.

successful implementation of the GoM's revamped development strategy would ensure that the negative effects of most of the anticipated risks discussed above are weathered successfully.

49. **Program proceeds will be mobilized and spent as a part of the Budget of the State and will follow the same rules, processes, controls and reporting obligations**. Program proceeds under Sub-Programs One and Two will be reflected predominantly in the CAS-FLCN. As mentioned above, the FLCN was established by the 2009 Budget Law as a dedicated budget line (CAS, i.e., *Compte d'Affection Spéciale*) within the MoI. The FLCN will receive annual contributions through the general budget in line with Morocco's annual budgeting process. The FLCN has in the past years been receiving MAD 200 million from the government budget per year. It is envisioned that the Government will continue to allocate annually at least this amount over the program implementation period and an annual allocation of FCLN fund proceeds to eligible risk reduction sub-project of at least MAD 170 million is specified as a DLI in the operation so as to ensure FLCN's financial predictability and sustainability (eith the remainder to be used for other purposes, such as emergency response). The CAS-FLCN is a budgetary envelope that: i) is a specific section within the budget documents which is voted by Parliament in the same form and at the same time than the rest of the Budget; is under the spending authority (*ordonnateur*) of a Minister (Minister of Interior for the FLCN); is not submitted to cancellation of uncommitted balance at the end of the fiscal year; except for the above, follows the same rules than the general budget. The CAS-FLCN is presented annually to Parliament with an expenditure framework. It is also subject to interim budget execution reports and part of the year-end budget execution report submitted to the Court of Accounts. In addition, for Subprogram Three a Government contribution is foreseen which will be used for the initial funding of the FSEC and will be determined by the Budget Law.

50. **Transfers from the CAS-FLCN to individual project implementing agencies will be made according to a specific disbursement plan and according to rules and processes agreed upon in a FA**. The selection process for individual projects will include an evaluation of the financial management and procurement capacity as well as an appreciation of the risk of corruption. Once the project is deemed eligible for funding, a FA will be signed between the MoI and the implementing entity. The FA will cover the disbursement modalities (based in most cases on work advancement justifications) and prospective calendar as well as fiduciary obligations, especially in terms of reporting. The FA will provide details and template forms to this effect. Implementing entities and their agencies will likely only be public sector entities, with bank accounts that are part of the Treasury network and with management and reporting rules which are clearly defined in laws and regulations. Bank proceeds will cover structural and non-structural risk reduction expenses for eligible projects. This includes works, goods and services. Eligibility criteria will define the nature of the works and exclude specific categories and will also define the specific geographic areas where works might be ineligible.

51. **Program Expenditure Framework.** For Subprograms One and Two, the Program Expenditure Framework consists of funds allocated to the CAS-FLCN and the corresponding co-financing mobilized. Specifically, it is expected that MAD 170 million will be allocated on an annual basis to finance eligible subprojects from the FLCN focusing on risk reduction. This financing contributes initially 70 percent of the total cost of eligible subprojects with project proponents and their partners contributing the remaining 30 percent. This co-financing will increase to 50 percent in the last year of the Program. The FLCN will therefore significantly leverage additional financial resources. Total expenditures under Subprogram One and Two are estimated to be MAD 1,436 million (approximately US$ 145 million) over the Program period. For Subprogram Three, the Program Expenditure Framework consists of financial resources mobilized to establish the FSEC. Total financial contributions for establishing FSEC are estimated to be MAD 1.1 billion (approximately US$111 million) during the five years of the Program. These funds

would come from the government's initial contribution and additional taxes.[22] The overall Program Expenditure Framework for the years 2016 to 2020 is summarized in Table 4.3 below.

Table 4: Program Financing 2016-2021 (US$ million) – By Sub-Program

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Subprogram 1 - Institutional Reform and Capacity Building[23]	2	3	3	3	3	**14**
Subprogram 2 - Risk Reduction Activities	22	24	26	28	31	**131**
Subprogram 3 - Disaster Risk Financing and Insurance	–	–	–	55	56	**111**
Total	**24**	**27**	**29**	**86**	**90**	**256**

Table 5: IBRD Contribution 2016-2021 (US$ million)

Source	Amount	% of Total
IBRD financing	200	78
Co-financing	56	22
Total	**256**	**100**

F. Program Results Framework and Disbursement Linked Indicators

52. **Program progress will be monitored through the detailed Results Framework**. The Program supports three broad and interrelated results areas in support of the Program Development Objective (PDO) which is to improve the institutional framework to finance disaster risk reduction activities and strengthen financial resilience to natural disasters for targeted population in the Program area. The three results areas as follows:

- **Results Area One (Promoting Institutional Development and Capacity Building):** The first results area focuses on improving Morocco's institutional disaster risk management structure. This will be achieved through the reform of the FLCN, with the objective of transforming it into a "national resilience fund" characterized by improved management processes, including an increased focus on ex-ante disaster risk reduction, better investment decisions based on transparent selection processes and a clear monitoring and evaluation system. Morocco's institutional capacity will also be strengthened by ensuring that national and local level institutions are better prepared for the onset of natural hazards. Furthermore, citizen participation and engagement in risk management will be enhanced. Together, this will lead to more strategic, evidence based and participatory approach of how disaster risks and resilience are being managed in Morocco.

- **Results Area Two (Scaling up Disaster Risk Reduction Activities):** The second results area aims at increasing actual protection of beneficiary population and asset in Morocco by scaling up structural

[22] Estimated figures for Subprogram Three are only indicative since the current draft law does not specify the amount of financial resources of FSEC. They will be fixed by the implementation decree once the law is approved.
[23] Estimated as 10 percent of total FLCN and partner financing.

and non-structural ex-ante disaster risk reduction activities. It aims at ensuring an appropriate balance between structural and non-structural activities, in light of potentially high benefit cost ratios of non-structural (i.e. such as awareness raising campaigns, early warning systems, etc.) interventions, as well as at increasing the role of local governments in risk prevention and mitigation. This will help institutionalize a risk management process in Morocco which is less fragmented and more integrated both horizontally (i.e. different ministries and national government agencies) and vertically (i.e. between national and local governments). By targeting in particular local governments significantly enhanced capacity for risk management at the regional and communal level will be achieved.

- **Results Area Three (Improving Disaster Risk Financing and Insurance):** The third results area complements results areas 1 and 2 by focusing on providing financial protection through disaster risk insurance as residual risks that cannot be cost-effectively mitigated need be efficiently financed. In addition, the Solidarity Fund FSEC will ensure that special attention is given to the most vulnerable population and communities which are often uninsured. This will help ensure that Morocco's approach to risk management is comprehensive in the sense of complementing institutional reform and capacity building (results area 1) not only with risk reduction investments (results area 2) but also with a strategic approach to financial management and insurance against catastrophic events.

53. The PDO level indicators of the Results Framework correspond to these three broad results areas. In addition, intermediate results indicators have been developed so as to reflect key intermediate results required to meet the PDO as well as to capture additional key, specific aspects of the Program's, including gender related aspects, improved risk management analytical tools and the implementation of risk management activities at the sub-national level, which is key given that local communities are most directly impacted by disaster events.

54. **Disbursement-linked Indicators (DLIs) have been selected to reflect critical elements of performance required to achieve the PDO**. All DLIs are indicators in the Results Framework. Particular attention has been paid to ensuring that the DLIs are i) fully aligned with government priorities and are implementable by the responsible implementation entities; ii) are achievable yet challenging at the same time; iii) are clearly measurable and independently verifiable; and iv) allow for a smooth disbursement profile over the period of Program implementation. In addition, the DLIs are designed to be mutually supportive and reinforce the overall Program objective. For example, DLIs 1 to 4 and 6 focus on the institutional reform aspects of the Program and ensure that the FLCN allocation process is transparent and the FLCN financially sustainable. The improved institutional architecture on risk management in Morocco will provide the basis for scaling up risk management activities, as captured in DLI 5. DLIs 7 and 8, capture required actions to ensure that Morocco's population and businesses are financially protected after a disaster strikes. The results chain presented in Table 6 below highlights how DLIs related to the key issues, activities, outputs, and outcomes under the Program.

Table 6: Program's Results Chain

Issues	**Activities/Inputs**	**Outputs**	**Outcomes**	**Related DLI**
Results Area 1: Promoting Institutional Development and Capacity Building				

No DRM architecture in place to ensure strategic orientation of and coordination within the government of Morocco	Actions to strengthen disaster risk and resilience governance coordination mechanisms	Establishment of FLCN Steering Committee, National Selection Commission and Secretariat; Development of national disaster risk and resilience management strategy	Strengthened system to strategically manage disaster risks and resilience in Morocco	DLI# 1
Lack of transparent management process, including in terms of M&E, of FLCN financed projects	Actions to strengthen management process, including M&E, for FLCN co-financed projects	Introduction of annual CfP and M&E system for the FLCN	More transparent and results oriented approach to managing the FLCN	DLI#1 & #2
Lack of citizen engagement in Morocco's risk management	Actions to improve a more systematic approach to citizens' engagement	Introduction of beneficiary feedback processes and GRM	Systematic integration of citizens' feedback in risk management	DLI#1, #2, #4 & #5
Results Area 2: Scaling up Disaster Risk Reduction Activities				
Lack of strategic approach to funding disaster risk reduction investments for local governments and at the national level	Annual allocation of FLCN funds to co-finance disaster risk reduction investments for local governments at the national level	Disaster risk reduction investments implemented at local and national levels	Protection of population and assets against natural hazards	DLI# 2 (financing stage) DLI# 4 (selection stage) DLI# 5 (implementation stage)
Lack of focus on non-structural risk reduction investments	Minimum annual allocation of FLCN funds to co-finance non-structural risk reduction activities	Non-structural risk reduction activities implemented	Protection of population and assets against natural hazards, specifically through non-structural activities	DLI#3
Results Area 3: Improving Disaster Risk Financing and Insurance				
Low insurance coverage against catastrophic events	Actions to introduce Morocco's national catastrophic risk insurance program in Morocco	Adoption of catastrophic draft risk insurance law and implementation of implementation legal documents	Insurance coverage of population and assets against catastrophic events	DLI#7
Lack of financial protection of uninsured population against catastrophic events	Actions to establish FSEC in Morocco, as required by the draft catastrophic risk insurance law	Legal establishment of FSEC in Morocco	Financial protection of uninsured population and principal residences	DLI#8

55. **Reporting progress on the Results Framework will be the responsibility of Secretariat and builds on Government systems.** Specifically, the Secretariat, housed at MoI, will prepare an annual

Program Report (including reporting on all PDO-level and intermediate results indicators, evidence of results related to DLIs, and evidence of compliance with requirements of the Program Action Plan). The Program Results Report will be submitted to the Bank no later 90 days after the end of the calendar year. The reporting arrangements for the Bank build on the efforts to improve the M&E system the MoI will put into place to measure implementation progress achieved under FLCN funded projects, as specified in the Financing Agreement signed between the MoI/MEF and project implementing agencies and their partners. In this sense, the results framework builds on and uses the government's own M&E systems that will be established to increase the transparency of the reformed FLCN. In addition, the Secretariat will also work jointly with the MEF to integrate all required information for results area three, on disaster risk financing and insurance.

G. Program's Economic Impact

Program's Economic Impact

56. The Program's economic impact is assessed by looking at i) the impact disasters can have on Morocco's GDP and fiscal balance; ii) highlighting the rationale for the use of public funds in reducing Morocco's risk profile; iii) estimating the direct economic impact comparing the "with Program" to the "without Program" scenario; and iv) specifying the Bank's value added in supporting Morocco's reform projects.

Fiscal and Economic Relevance

57. **Fiscal and economic impacts of natural hazards are significant in Morocco**. Table 2 in Section C above shows the estimated direct damage losses by sector for two levels of disaster – Probable and Possible. Table 7 below shows direct damage and production losses for a Rare but Possible events, providing a more comprehensive assessment of the fiscal and economic impacts of disasters. In Table 6 the range of production losses reflects results from two different economic models – the Input-Output (IO) model which typically produces the higher number and is the magnitude of economic losses likely to be estimated immediately after a disaster, and the Computable General Equilibrium (CGE) model which typically produces the lower number and is the magnitude of economic losses likely to actually occur if resilience-enhancing economic policies have been introduced ex ante and loss mitigating economic policies are introduced in a timely manner ex post the disaster. Also shown are the averages of these estimates as percentages of Morocco's Production Base, GDP and National Budget, respectively. As can be seen in Table 6 total estimated losses for Morocco range from MAD 50 to 160 billion (the latter being the "Rare but Possible" earthquake). While this level of disaster is difficult to fully prepare it at least requires consideration and perhaps some preparation, since this level of event causes losses of more than half the Government annual budget and 20 percent of national GDP. Even a Possible flood has the potential for losses amounting to 17 percent of the Government's annual budget[24] and 6 percent of national GDP. Such events would cause fiscal, and probably economic, crises and Government development strategies would be severely disrupted.

[24] In general in the risk assessment arena, the larger the event the longer is the return period (and the lower the probability). Even though infrequent, it is a mistake to disregard large events – just in the last few years, the 2004 Indian Ocean Earthquake and Tsunami was approximately a "600 year" event, and the 2011 Japan Earthquake and Tsunami a "1,000 year" event.

Table 7: Property and Economic Production Losses in a "Possible" to "Rare but Possible" Disaster[25] vs. Production, GDP and Budget

	Earthquake	Flood	Tsunami
	National Losses (MAD 10 billion)		
Total Property Damage	MAD 111	MAD 34	MAD 59
Total Production Loss	MAD 43~52	MAD 11~14	MAD 22~26
Total (PD + PL)	**MAD 154~163**	**MAD 45~48**	**MAD 82~85**
Average as Percentage of PRODUCTION BASE (base = MAD 1,009 billion)			
Total Property Damage	11%	3%	6%
Total Production Loss	4%	1%	2%
Total (PD + PL)	16%	5%	8%
Average as Percentage % GROSS DOMESTIC PRODUCT (base = MAD 800 billion)			
Total Property Damage	14%	4%	7%
Total Production Loss	5%	1%	3%
Total (PD + PL)	20%	6%	10%
Average as Percentage of NATIONAL BUDGET (base = MAD 276 billion)			
Total Property Damage	40%	12%	21%
Total Production Loss	16%	4%	8%
Total (PD + PL)	58%	17%	30%

Rationale for the Use of Public Funds

58. **Supporting the Program through the provision of public funds is fully appropriate.** Public funding for disaster risk management investments is common across almost all countries due to a number of factors including: structural and non-structural natural disaster risk reduction often involves projects in which everyone benefits, the classic case for public funding. Clear examples are a flood protection structure or early warning systems – they protect everyone (benefits are difficult to restrict to only those who pay); there is also under-investment in ex ante risk reduction due to many institutional challenges and in-built biases to focus mainly on ex-post response which calls for additional incentives to be provided to promote ex ante mitigation actions. For disaster risk insurance, due to the high consequence/ low probability nature of natural hazards, the insurance industry on its own prefers to avoid natural disaster insurance, and would only provide such insurance when the premium is exceedingly attractive. As a result, government intervention is required, including in terms of providing coverage for the uninsured which included the poorest and most vulnerable segments of society. Together all elements of the Program will significantly enhance the efficiency and effectiveness of public expenditures, both in the context of the reform of the CAS-FLCN and disaster risk insurance Sub-Programs.

[25] "Rare but Possible" disaster corresponds to an earthquake with an annual probability of 1/10,000 and flood or tsunami with an annual probability of 1/1,000.

Direct Program Economic Impact

59. **The Program's economic impact will be beneficial and significant.** Analyses performed using MnhPRA ("What-if" Scenarios, see box) indicate very positive benefit cost ratios (BCR) for typical measures undertaken under the Program, ranging as high as 54[26]. Additional economic benefits accrue from jobs created and multiplier effect of expenditures in the economy. Based on estimates of MnhPRA, an investment of MAD 2.7 billion would save over 5,800 lives and correspondingly reduce injuries and trauma for a much large population, while achieving benefits of MAD 26.5 billion, equivalent to a Benefit Cost Ratio (BCR) of 9.8 and Internal Rate of Return (IRR) of 29%. These results are based on selecting the ten most cost-beneficial mitigation actions from a set of 51 that were examined using MnhPRA. The IRR is based on a simplified calculation assuming all capital investment being made at project initiation (see box for more details).

[26] World Bank. (2013). "What If Scenario Analysis Report, Morocco Natural Hazards Probabilistic Risk Analysis and National Strategy Development." for the Ministry of General Affairs and Governance, prepared by RMSI Ltd. for the International Bank for Reconstruction and Development, Washington, D.C. Contract No. 715742 with support from GFDRR and the Swiss Development Cooperation Agency, Rabat, 463.

"What-if" Scenarios

"What-if" is an analysis of the benefits and costs of a particular risk reduction action. For example "*what if* schools are strengthened for earthquake?" The *"what if…?"* question asks "*what* are the benefits *if*… [some action is taken]."

In the context of disaster risk reduction, benefits are typically avoided future losses, which (given they haven't yet occurred) are calculated based on the probability of their occurrence – that is, probabilistic risk analysis. While greater and greater benefits accrue with more and more mitigation, there is also increasing cost, and one seeks an 'optimum' level of mitigation, which is the point at which the decreasing loss equals the increasing cost of mitigation. Probably the most common method of determining the optimum level of mitigation is benefit-cost analysis, which seeks to determine the Benefit-Cost Ratio (BCR) of a particular mitigation action—the higher the BCR, the more *bang* (benefits, that is, avoided loss) *for the buck* (cost of mitigation).

Using MnhPRA, 51 different mitigation scenarios were examined, such as seismic strengthening of buildings, flood warning systems, structural measures for flood protection, evacuation mapping and elevating buildings to protect against floods. The scenarios considered high-risk areas such as Al-Hociema and Nador province for earthquake, Kenitra province for floods, coastal areas of the country for tsunami, and selected key provinces such as Fes and Agadir.

BCRs for the 51 scenarios ranged from 54.3 to 1.1. The total cost of mitigation for all 51 what-if scenarios was MAD 9.3 billion. The top ten scenarios in terms of BCR were:

	Mitigation	Area	Occupancy	BCR
1.	Flood Warning System	Ouregha (Sebou)	Overall	54.3
2.	Flood Warning System	Ouregha (Sebou)	Residential	45.6
3.	Culverts on Rail Road (flood protection)	Gharab	Rail-line	34.6
4.	Flood Warning System	Ouregha (Sebou)	Essential Facilities	12.1
5.	Tsunami Evacuation Mapping	Coastal Morocco	Population	8.3
6.	Flood Mitigation of Residential Buildings for new township	Kenitra	Residential	8.2
7.	Flood Mitigation of Government Buildings for new township	Kenitra	Government Buildings	7.2
8.	Seismic Retrofitting	Nador	Hospitals	5.8
9.	Risk assessment for new township	Kenitra	Buildings	5.7
10.	Seismic Risk assessment for new schools	Whole Morocco	Schools	4.4

The total cost for the top ten portfolio was MAD 2.7 billion, which achieved a benefit (net present value of future losses) of MAD 26.5 billion, or a BCR of 9.8. Using a simplified analysis assuming all capital investment being made at project initiation, this is equivalent to an internal rate of return **(IRR) of 29 percent.** Critically, **over 5,800 lives would be saved, and injuries and trauma reduced for a correspondingly larger population**.

Source: World Bank 2012. What If Scenario Analysis Report, Morocco Natural Hazards Probabilistic Risk Analysis and National Strategy Development. The Ministry of General Affairs and Governance, prepared by

60. **International experience further reinforces these findings** – that if appropriately managed disaster risk reduction projects, especially those that are community based with participatory approaches, can achieve high IRRs and have significant economic spin-off effects. A major study of disaster mitigation for the US Congress[27] found that, overall, mitigation produced benefit-cost ratios of four. Evidence based on disaster risk management activities in developing countries confirms this finding[28].

[27] Multihazard Mitigation Council. (2006). "Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities." National Institute of Building Sciences.
[28] Understanding the Economics of Flood Risk Reduction: A Preliminary Analysis (2012) See http://www.gfdrr.org/understandingeconomicsofflooddriskreduction

There is a clear rationale for public intervention as, in general, disaster risk management investments mitigate market failures and provide public goods type infrastructure. Returns tend to be higher for simpler activities that were not very capital-intensive – that is, local community projects, which is a key focus of the Program.

Table 8 Summary of possible BCR values in disaster risk reduction projects[29]

Country	Hazards	BCR max
Malawi	Drought	24.0
Sudan	Drought	1,800.0
Fiji	Flood	7.3
India	Drought	3.5
Nepal	Earthquake	2.0
World (35)	Flood	60.0
World (35)	Wind damage	6.07
World (35)	Earthquake	5.1
Fiji	Flood	7.3
Germany	Flood	9.0
Austria	Flood	1.7
Peru	Flood	3.8
Indonesia	Flood	2.5
Philippines	Flood	31.0
Nepal	Flood	3.5
Nepal	Flood	18.6
Iran	Flood	1.3
Pakistan	Flood	25.0
India	Flood	2.5
Pakistan	Flood	25.0
Bangladesh	Cyclone; flood	4.9
India	Flood	57.8
Philippines	Flood; lahar	30.0
USA	All	5.1; overall average 4
China	All	4.0

61. **The economic value of the disaster risk finance and insurance program is also positive.** The proposed catastrophic risk insurance program is expected to generate several social and economic benefits. For the Government, introducing a compulsory catastrophic risk insurance guarantee (for the insured) and a compensation system for the non-insured households through the FSEC, allows the government to clarify its contingent liability related to catastrophic events. Too often, financing recovery cost after natural disasters among the various stakeholders is left unspecified, which creates a de facto implicit contingent liability for the government (as the government faces social pressure to compensate the victims of a disaster although it has no legal obligation). In addition, the program enables Morocco to transfer a fraction of potential disaster losses to the private insurance sector, thereby reducing the

[29] Shreve, C. M., and I.Kelman. (2014). "Does Mitigation Save? Reviewing Cost-Benefit Analyses of Disaster Risk Reduction." International Journal of Disaster Risk Reduction

government's (implicit) contingent liability. For households, the catastrophic risk insurance program provides households with more certainty about the financial support they can expect to receive after a disaster. According to the preliminary actuarial analysis conducted by the World Bank, insured households would receive on average MAD 700 million every year as insurance payouts from floods and/or earthquakes, while uninsured affected households could receive MAD 800 million on average from the FSEC every year. In addition, such a program should provide faster payouts since the payout structure is already pre-defined. Some economic analyses show that immediate cash payment following a disaster have significant welfare benefits, especially for the poor households; the value of US$1 paid in the wake of a disaster is worth at least US$2.5 paid several weeks later.[30] For the domestic insurance industry, the program will expand the non-life domestic market. Preliminary actuarial analysis conducted by the World Bank estimates that this will generate approximately MAD 840 million in additional annual insurance premium volume, or 4.5 percent of the 2014 non-life premium volume in Morocco. In case of a major disaster (e.g., with a 100 year return period), the preliminary actuarial analysis of the World Bank estimates that the insurance industry would inject approx. MAD 1 billion as insurance payouts in the economy, a large fraction of this amount coming from foreign reinsurers as the cat risk insurance business is mainly transferred to the international reinsurance market (usually in excess of 90 percent).

World Bank Value Added

62. **The World Bank value added is significant**. It is based on both a long engagement with Morocco on various aspects of risk management as well as its significant global experience developing operational programs in support of countries' disaster risk management policies and programs. The Bank has had a partnership with Morocco on risk management since 2008 (see Box 1) and has extensively supported Morocco in developing its approach to risk management along all key dimensions, including the development of a risk assessment (MnhPRA), the reform of the FLCN and the support to the catastrophic risk insurance program. Based on the Bank's in-depth engagement over the past seven years, the Bank is uniquely positioned to support Morocco's next phase or risk management by operationalizing Morocco's ambitious reform agenda, building on the work completed to date. In doing so, it can draw on extensive global experience developing operational programs in support of countries' disaster risk management policies and programs, including from FONDEN's in Mexico, Philippines Disaster Resilience Fund, Columbia Adaptation Fund, the Turkish Catastrophe Insurance Pool, the Romanian Catastrophe Risk Insurance Pool, and the Southeast Europe and Caucasus Regional Catastrophe Risk Insurance Facility.

H. Technical Risk Rating and Mitigation Measures

63. **Technical risk is assessed as substantial**. The Program is well founded institutionally and at its core is being managed by two established institutions: the MoI and the MEF. The MoI is principally in charge of Sub-Programs One and Two and the MEF in charge of Sub-Program Three. For Sub-Program Three, under the MoF, ACAPS is the technical leader for the implementation of the draft catastrophic risk insurance law and as the insurance regulator well qualified to do so. The main risks identified in the Technical Assessment pertain to the implementing agencies' and their partners' capacity to effectively implement projects co-financed under Sub-Program One and Two. This stems from the fact that the operation cuts across multiple sectors and responsible line Ministries, Public Agencies as well as layers of government. In addition, local governments are less familiar with implementing risk reduction activities as this is a newer area of engagement and responsibility for them. Technical risks are therefore assessed to be substantial despite the fact that a large majority of non-structural and structural risk management activities involve relatively standard and/ or smaller scale infrastructure investment program. It is envisaged that specific technical strengthening activities are included under the Program, including, as

[30] Clarke and Hill. 2013. *Cost-Benefit Analysis of the African Risk Capacity Facility*.

required, through the mobilization of qualified consultants. The Program also specifically targets upstream capacity building actions, targeted to working with potential project proponents to develop and submit good quality projects to be co-financed by the FLCN. Importantly, technical audits will be conducted by the General Inspectorate of Territorial Administration (IGAT, i.e. Inspection Générale de l'Administration Territoriale), a well-qualified department in the MoI, to ensure that the funded projects are implemented in line with the required technical standards. There is a residual risk in terms of ensuring that the co-financing required for FLCN funded projects materializes, but the risk is mitigated by requiring firm commitment for co-financing as part of the FA signed between the MoI, MEF and project implementation agencies and their partners.

I. Input into the Program Action Plan

64. A Program Action Plan (PAP) has been developed to identify key actions required to ensure successful Program implementation, including in light of the key risks identified. Technical aspects of the PAD are shown in Annex 8 and include three broad categories. First, actions to establish a transparent management, including with respect to M&E of investments financed by the FLCN. Second, actions to support the successful selection and implementation of risk reduction projects co-financed by the FLCN (training, capacity building, etc.). Third, actions to further develop Morocco's risk assessment and monitoring, including in the area of actuarial modeling required for the implementation of the draft catastrophic risk insurance law.

Table 9: Technical Input into Program Action Plan

N°	Action Description	Due Date	Responsible Party	Completion Measurement
Program Management				
1	Develop an M&E system for the management of the FLCN	12 months after the Effectiveness Date	MoI	An M&E system for the FLCN is created
2	Create an interactive website of the FLCN that (i) provides public access to information, (ii) handles grievances, and (iii) reports on the M&E system	18 months after the Effectiveness Date	MoI	The interactive website of the FLCN is created
3	Include in the FA between MoI/ MEF and the implementing agencies of eligible subproject of the FLCN, provisions to make available technical, environmental, social and fiduciary expertise	Annually (At signature date of the FA)	MoI/MEF	The FA included provision for adequate capacity of FLCN subproject proponents
4	Prepare and implement a capacity building plan including on technical, social, environmental and fiduciary aspects	Annually (starting from 2017)	MoI	Submission and implementation of annual capacity building plan to strengthen implementation agencies
5	Prepare and implement an action plan for technical and fiduciary audit recommendations made by auditors	Annually	MoI	Recommendations made by technical and fiduciary auditors are implemented
6	Develop probabilistic catastrophe risk models for (i) evaluation and assessment of risks (MoI), and (ii) catastrophe risk insurance program as per the draft law	36 to 48 months after the Effectiveness Date	MoI/MEF/ ACAPS	The catastrophe risk modeling tools are developed within 36 months and operational

N°	Action Description	Due Date	Responsible Party	Completion Measurement
	(MEF/ACAPS)			within 48 months after the Effective Date of the Loan Agreement.
		Social and Environmental		
7	Develop GRM for the FLCN at the national (website of the FLCN) and local levels	18 months after the Effectiveness Date–at the national level-and 6 month after signature of the FA by the project proponents – at the local level	MoI	GRM are in place
8	Prepare simplified technical guides for FLCN subprojects on: (i) Environmental and Social Management, incl. on public consultations and resettlement; and (ii) GRM	18 months after the Effectiveness Date	MoI	Technical guides finalized
		Fiduciary[31]		
	Alignment with the triennial budget programming updated on a yearly basis for the CAS-FLCN	For Effective Date of the 2019 Budget Law	MoI/ MEF	CAS-FLCN amended for the 2019 Budget
	Include in the FA between the MoI and project proponents of timeline for project implementation	For each signature of FA	MoI	The FA included implementation timelines

J. Input into the Implementation Support Plan

65. The objectives of the Implementation Support Plan (ISP) are (i) to monitor implementation progress of the Program (including its PAP) and the implementation of the risk mitigation measures defined in the technical, fiduciary, and safeguard assessments and (ii) to provide the counterpart with the technical advice necessary to facilitate the achievement of the PDO and contribute to the quality of the capacity building of stakeholders by providing best practices, benchmarks and training.

66. The Bank will provide regular implementation support to the Program as appropriate, including for the implementation of the PAP. Formal implementation support missions and field visits will be carried out semi-annually. The main focus of the implementation support is summarized below:

Table 10. Main focus of Implementation Support

Time	***Focus***	***Skills Needed***	***Resource Estimate (US$)***	***Partner Role***
	Task Team Leadership and Program supervision	Project management		
	Technical support and capacity building	Risk management		
	M&E support and	M&E		

[31] Regarding the action related to the availability of fiduciary competences for the implementation of subprojects, on must refer to the action n°3 under “Program management”.

	capacity building			
First twelve months	Procurement support and capacity building	Procurement	150,000 BB	SDC financed international expert co-located with MoI to support Program Management with a focus on Sub-Programs One and Two (expert will start work before Program effectiveness)
	FM support and capacity building	FM		
	Social development support and capacity building	Social development		
	Environmental support and capacity building	Environmental management		
	Technical support to risk financing agenda	Risk Finance		
12-48 months	Task Team Leadership and Program Supervision	Project management	100,000 BB per year	Continued support by SDC financed international expert co-located with MoI (financing agreed in principle with SDC as a continuation of year one activity)
	Technical support and capacity building	Risk management		
	Procurement supervision	Procurement		
	FM supervision	FM		
	Environmental supervision	Environment management		
	Social development supervision	Social development		
	Technical support to risk financing agenda	Risk Finance		

Annex 1: Results Framework Matrix

Program Development Objective: To improve the institutional framework to finance disaster risk reduction activities and strengthen financial resilience to natural disasters for targeted population in the Program area.												
PDO Level Results Indicators	**Core**	**DLI**	**Unit of Measure**	**Baseline**	**Target Values**					**Frequency**	**Data Source/Methodology**	**Responsibility for Data Collection**
					CY2016	**CY2017**	**CY2018**	**CY2019**	**CY2020**			
PDO Indicator 1: The FLCN strategic orientation and governance structure are redesigned with a focus on disaster risk reduction	☐	☒	Text	The FLCN focuses mainly on post disaster event risk response outside the context of a larger DRM strategy	Preparation of: (i) draft provisions to be included in the Borrower's 2017 budget law, regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) draft circulars *(Circulaires)*	(i) the Borrower's 2017 budget law includes provisions regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) circulars *(Circulaires)* regarding the establishment of the National Selection Commission and the	The Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained	The Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained. A national integrated natural DRM strategy is prepared by the Steering Committee.	The Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained. A national integrated natural DRM strategy is adopted by the Steering Committee.	Annual	Program Progress Report with supporting documents	MoI/ Secretariat

					to be issued by the MoI regarding the establishment of the National Selection Commission and the Secretariat. The Minister of Interior has decided on the annual allocation from the FLCN for the financing of Eligible Sub-projects	Secretariat have been issued by the MoI. An interactive FLCN website that provides public access to information, handles grievances, and reports on the M&E system, has been created						
PDO Indicator 2: Cumulative number of beneficiaries from eligible risk reduction subprojects (% women)[32]	☐	☐	#	0	–	–	1,000 (50)	4,000 (50)	40,000 (50)	Annual	Program Progress Report with supporting data	MI/ Secretariat
PDO	☐	☒	#	0	–	–	-	5.85 million	5.85 million	A	Program	MEF/

[32] This is indicator is a conservative estimate of potential number of beneficiaries protected by projects co-financed by the FLCN, counting direct and indirect beneficiaries from structural and non-structural activities. Exact estimates are difficult as the totality of investments and allocation between structural and non-structural investments as well as the type of risk reduction investments (i.e., flood protection vs seismic retrofitting) is not known ex ante. Indicator will be reviewed and updated at mid-term in light of the underlying actual investment decisions made.

Indicator 3: Minimum number of people in the Program Area insured for bodily injury against catastrophic events[33]										nnual	Progress Report with data on actual insurance coverage (from MEF/ACAPS)	ACAPS
PDO Indicator 4: Establishment and operationalization of the FSEC to protect the uninsured	☐	☒	Text		–	The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are prepared by the MEF and ACAPS	The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are adopted by the Government	FSEC received initial financial contributions as per the provisions of the catastrophic risk insurance law		Annual	Program Progress Report and written evidence of implementation legal documents referred to in Article 71 of draft law and financial contributions received by FSEC.	MEF/ ACAPS and FSEC
Intermediate Results Area 1: Promoting Institutional Reform and Capacity Building												

[33] Catastrophic events are defined as per the draft law n.110-14.

Intermediate Results Indicator 1: Minimum percentage of entities responsible for the implementation of eligible subprojects receiving technical assistance and/or training	☐	☒	%	0	0	50	50	50	50	Annual	Program Progress Report	MI/ Secretariat
Intermediate Results Indicator 2: Improved risk assessment models developed and operational	☐	☐	Text	No	–	–	Probabilistic catastrophe risk models for i) evaluation and assessment (MoI), and ii) catastrophic risk insurance program as per the draft law (MEF) are developed	Probabilistic catastrophe risk models for i) evaluation and assessment (MoI), and ii) catastrophic risk insurance program as per the draft law (MEF) are operational	–	Annual	Program Progress Report and revised cat risk model	MoI/ Secretariat
Intermediate Results Area 2: Scaling-up Disaster Risk Reduction Activities												
Intermediate Results Indicator	☐	☒	#	0	MAD 170 million	MAD 340 million	MAD 510 million	MAD 680 million	MAD 850 million	Ann	Program Progress Report	MI/ Secretariat

3: Cumulative amount of FLCN funds allocated to eligible subprojects										ual		
Intermediate Results Indicator 4: Minimum percentage of FLCN funds allocated to eligible non-structural subprojects	☐	☒	%	0	0	10	10	10	10	Annual	Program Progress Report	MI/ Secretariat
Intermediate Results Indicator 5: Minimum percentage of total funding of eligible subprojects provided by the entities responsible for implementation and partners	☐	☒	%	0	0	35	40	45	50	Annual	Program Progress Report	MI/ Secretariat
Intermediate Results	☐	☒	#	0	0	0	MAD 100 million	MAD 350 million	MAD 600 million	An	Program Progress	MI/ Secret

Indicator 6: Cumulative value of total funding of completed eligible subprojects achieving disaster risk reduction targets										nual	Report	ariat
Intermediate Results Area 3: Improving Disaster Risk Financing and Insurance												
Intermediate Results Indicator 7: Adoption of the catastrophic risk insurance legislative and regulatory framework	☐	☒	Text		The draft catastrophic risk insurance law is transmitted by the General Secretary of the Government (*Secrétariat Général du Gouvernement*) to the relevant Ministries, and is adopted by the Government Cabinet (*Conseil du Gouvernement)*	The draft catastrophic risk insurance law is transmitted to the Parliament, and the implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law and providing for the effectiveness of the insurance scheme, are prepared by the MEF and ACAPS	The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law and providing for the effectiveness of the insurance scheme, are adopted by the Government	-	–	Annual	Program Progress Report and written evidence of actual adoption of law and implementation legal documents referred to in Article 71 of the draft law.	MEF/ ACAPS

Annex 2: Disbursement Linked Indicators, Disbursement Arrangements and Verification Protocols

Table 1. Disbursement Linked Indicator Matrix

	Total Financing Allocated to DLI	***As % of Total Financing Amount***	***DLI Baseline***	***Indicative timeline for DLI achievement***				
				CY2016	***CY2017***	***CY2018***	***CY2019***	***CY2020***
DLI 1: **The FLCN strategic orientation and governance structure are redesigned with a focus on disaster risk reduction**			The FLCN focuses mainly on post disaster event risk response outside the context of a larger DRM strategy	Preparation of: (i) draft provisions to be included in the Borrower's 2017 budget law, regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) draft circulars (*Circulaires*) to be issued by MoI regarding the establishment of the National Selection Commission and the Secretariat. (US$8 million)	(i) the Borrower's 2017 budget law includes provisions regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) circulars *(Circulaires*) regarding the establishment of the National Selection Commission and the Secretariat have been issued by the MoI. (US$7 million)	The Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained.	The Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained. A national integrated natural DRM strategy is prepared by the Steering Committee.	The Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained. A national integrated natural DRM strategy is adopted by the Steering Committee.

	Total Financing Allocated to DLI	*As % of Total Financing Amount*	*DLI Baseline*	*Indicative timeline for DLI achievement*				
				CY2016	*CY2017*	*CY2018*	*CY2019*	*CY2020*
				The Minister of Interior has decided on the annual allocation from the FLCN for the financing of Eligible Sub-projects. (US$7 million)	An interactive FLCN website that provides public access to information, handles grievances, and reports on the M&E system, has been created. (US$7 million)			
Allocated amount (US$, millions):	35	17.5		15	14	0	3	3
DLI 2: Cumulative amount of FLCN funds allocated to eligible subprojects			0	MAD 170 million	MAD 340 million	MAD 510 million	MAD 680 million	MAD 850 million
Allocated amount (US$, millions):	25	12.5		5	5	5	5	5
DLI 3: Minimum percentage of FLCN funds allocated to eligible non-structural subprojects			0	0	10	10	10	10
Allocated amount (US$, millions):	8	4		0	2	2	2	2
DLI 4: Minimum percentage of total funding of eligible subprojects provided by the entities responsible for implementation and their partners			0	0	35	40	45	50

	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Indicative timeline for DLI achievement				
				CY2016	CY2017	CY2018	CY2019	CY2020
Allocated amount (US$, millions):	22	11		0	8	8	3	3
DLI 5: Cumulative value of total funding of completed eligible subprojects achieving disaster risk reduction targets			0	0	0	MAD 100 million	MAD 350 million	MAD 600 million
Allocated amount (US$, millions):	40	20	-	0	0	6.67	16.7	16.6
DLI 6: Minimum percentage of entities responsible for the implementation of eligible subprojects having received technical assistance and/or training			0	0	50	50	50	50
Allocated amount (US$, millions):	10	5		0	4	2	2	2
DLI 7: Adoption of the catastrophic risk insurance legislative and regulatory framework and minimum number of people in the Program Area insured for bodily injuries against catastrophic events			–	The draft catastrophic risk insurance law is transmitted by the General Secretary of the Government (*Secrétariat Général du Gouvernement*) to the relevant Ministries, and is adopted by the Government Cabinet (*Conseil du*	The draft catastrophic risk insurance law is transmitted to the Parliament, and the implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law and providing for	The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law and providing for the effectiveness of the insurance scheme, are adopted by the	5.85 million	5.85 million

	Total Financing Allocated to DLI	*As % of Total Financing Amount*	*DLI Baseline*	*Indicative timeline for DLI achievement*				
				CY2016	*CY2017*	*CY2018*	*CY2019*	*CY2020*
				Gouvernement)	the effectiveness of the insurance scheme, are prepared by MEF and ACAPS	Government		
Allocated amount (US$, millions):	34.5	17.25		14.5	7	5	8	0
DLI 8: Establishment and operationalization of the FSEC to protect the uninsured			-	-	The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are prepared by the MEF and ACAPS	The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are adopted by the Government	FSEC received initial financial contributions as per the provisions of the catastrophic risk insurance law	
Allocated amount (US$, millions):	25	12.5		0	9	8	8	0
Capitalized front-end fee			-	-	-	-	-	-
Allocated amount (US$, millions):	0.5	0.25	-	0.5	0	0	0	0
Total Financing Allocated				**35**	**49**	**36.67**	**47.67**	**31.66**

	Total Financing Allocated to DLI	As % of Total Financing Amount	DLI Baseline	Indicative timeline for DLI achievement				
				CY2016	*CY2017*	*CY2018*	*CY2019*	*CY2020*
(US$, millions):								

Table 2. DLI Verification Protocol Table

#	*DLI*	*Definition/ Description of achievement*	*Scalability of Disbursements (Yes/No)*	*Protocol to evaluate achievement of the DLI and data/result verification*		
				Data source/agency	*Verification Entity*	*Procedure*
1	The FLCN strategic orientation and governance structure are redesigned with a focus on disaster risk reduction	DLI1 measures the evolution of the institutional arrangements and management of the FLCN as well as the progress of the development of the national integrated DRM strategy. Yr 1: All documents that are required for the preparation of: (i) the draft provisions to be included in the Borrower's 2017 budget law, regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) draft circulars *(Circulaires*) to be issued by MoI regarding the establishment of the National Selection Commission and the Secretariat. These documents will reflect that new strategic orientation of the FLCN focuses on risk	No	Program Progress Report/ Secretariat	IGAT	The Government of Morocco provides official documentation demonstrating that all agreed milestones have been reached each year. DLI results and accuracy of information will be independently verified.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		reduction. *Risk reduction* is defined as an action resulting in an expected decrease in loss given the occurrence of a natural hazard—before a disaster event occurs. The Minister of Interior has decided on the annual allocation from the FLCN for the financing of Eligible Sub-projects. An annual allocation from the FLCN is defined by the inclusion of the allocations in the FLCN budget program (*programme d'emploi*). The minutes of the meetings of the governance bodies of the FLCN and the process of the CfP (launch, selection, and approval of sub-projects) will be verified. Yr 2: Evidence that: (i) (i) the Borrower's 2017 budget law includes provisions regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) circulars *(Circulaires*) regarding the establishment of the National Selection Commission and the Secretariat have been				

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		issued by the MoI. In addition, an interactive FLCN website will be created which shall be accessible by the public and provide information on subproject eligibility, selection criteria, status and results, and shall provide a mechanism for the public to submit and track grievances and their resolution. Yr 3: Achievement will be measured by the fact that the Steering Committee, the National Selection Commission, the Secretariat and the FLCN website are maintained and fulfil their intended functions. *Maintained and fulfill their intended functions* means the governance arrangements specified in the Budget law and associated circulars, as well as the FLCN website are being implemented as planned. Yr 4: Achievement will be measured by the fact that the Steering Committee, the National Selection Commission, the Secretariat and the FLCN website are maintained and fulfil their				

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	*Verification Entity*	*Procedure*
		intended functions. In addition, a *national integrated natural DRM strategy* will be prepared in line with the requirements of the POM. It is a document that assesses the lessons learned from FLCN's experience to date and sets DRM goals and their priorities for Morocco. *Risk management goals* means an acceptable level of risk and resilience, and corresponding management structures and procedures, that Morocco will achieve at a stated point in the future. *Preparation* means production of the strategy ready for adoption by FLCN. Yr 5: Achievement will be measured by the fact that the Steering committee, the Selection Commission, the Secretariat and the FLCN website are maintained and fulfil their intended functions. In addition, the national integrated natural DRM strategy will be adopted. *Adoption* means formal approval of the document by FLCN Steering Committee (justified by the minutes) and				

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	***Verification Entity***	***Procedure***
		publication of the strategy on the FLCN webpage.				
2	Cumulative amount of FLCN funds allocated to eligible subprojects	DLI2 measures the cumulative amount of FLCN funds allocated to eligible sub-projects as specified in the POM. The Steering Committee following a recommendation of the National Selection Commission and based on a set of clear eligibility and selection criteria approves annually a list of eligible subprojects focusing on risk reduction. *Cumulative amount of FLCN funds* allocated is calculated as the cumulative sum of funding from the FLCN for those subprojects whose proponents and their partners have signed an FA with the MoI and MEF. *Focusing* means the primary and major effort of a subproject. *Risk reduction* means that the eligible subproject's outcome is credibly expected to result in lower losses (that is, decreased deaths, injuries, property loss and economic activity) given the occurrence of a natural hazard. Risk reduction will need to be documented in the	Yes	Program Progress Report/ Secretariat	IGAT	The Government of Morocco provides evidence on FLCN funds allocated to eligible subprojects focusing on risk reduction. DLI results and the accuracy of information will be independently verified.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		application forms submitted for FLCN financing and be measurable and verifiable (for example, by flood maps before and after project implementation).				
3	Minimum percentage of FLCN funds allocated to eligible non-structural subprojects	DLI3 measure the percentage of funds allocated to non-structural sub-projects relative to the total of all subprojects. The Steering Committee following a recommendation of the National Selection Commission approves annually a list of eligible non-structural subprojects. *Percentag*e of FLCN funds is calculated as the sum of funding for non-structural eligible subprojects versus all eligible subprojects, both of whose proponents have signed an FA. *Non-structural* subprojects are subprojects, such as risk assessments, planning, capacity building/ training, awareness raising and early warning systems.[34] A list of non-structural projects will be specified in	No	Program Progress Report / Secretariat	IGAT	The Government of Morocco provides evidence on FLCN funds allocated to eligible non-structural subprojects. DLI results and accuracy of information will be independently verified.

[34] See http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPREGTOPRISKMGMT/0,,contentMDK:22239627~pagePK:34004173~piPK:34003707~theSitePK:4077908,00.html and http://www.preventionweb.net/english/professional/terminology/v.php?id=505 for further information.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		the POM. For the purposes of this project, small-scale structural subprojects whose total investment is less than MAD 5 million are considered non-structural.				
4	Minimum percentage of total funding of eligible subprojects provided by the entities responsible for the implementation and their partners	DLI4 measures the leverage factor of FLCN financing. The Steering Committee ensures that a minimum percentage of additional financing is mobilized to complement FLCN funding received by selected eligible subprojects. Additional financing would be mobilized by entities responsible for implementation and their partners. *Additional Financing* will need to be confirmed in writing through the FA. *Minimum percentage* is measured by the financing mobilized by entities responsible for implementation and their partners relative to total cost of subprojects as shown in signed FAs. *Entities responsible for implementation* are those entities submitting a subproject's application to FLCN, and assume the financial, management and legal responsibility for the	No	Program Progress Report/ Secretariat	IGAT	The Government of Morocco provides evidence on total financing sources of eligible subprojects. DLI results and accuracy of information will be independently verified.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	**Verification Entity**	**Procedure**
		subproject. They are likely to include line ministries, local and provincial governments, public entities and state-owned enterprises. *Partners* are any other entity except FLCN, who participate in the project through financial, management, beneficiary or other mechanisms. The verification is based on the amounts mobilized by partners as described in the FA.				
5	Cumulative value of total funding of completed eligible subprojects achieving disaster risk reduction targets	DLI5 measures the value of FLCN financing mobilized for the completed projects achieving their disaster risk reduction targets. The Steering Committee provides evidence that eligible subprojects achieve their risk reduction targets. *Cumulative value of funding* is the sum of the total costs of completed eligible subprojects that have received funding from FLCN. A subproject is considered completed when the subproject proponent provides FLCN (a) for structural subprojects, a Provisional Completion Report issued as per Morocco	Yes	Program Progress Report/ Secretariat	IGAT	The Government of Morocco provides evidence that completed eligible subprojects have achieved risk reduction targets. DLI results and the accuracy of the information will be independently verified.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		regulations and *Cahier des Charges*, and (b) for non-structural subprojects, a Declaration of Completion issued by the subproject proponent. *Achieving disaster risk reduction targets* means that eligible subprojects have achieved the targets determined by a baseline, as agreed at the selection stage and verified at project completion. Each subproject's baseline and risk reduction targets shall be defined in the application form submitted for FLCN funding. *Risk reduction targets* vary depending on the type of risk reduction activity undertaken and could include: • For flood protection projects: the number of people and value of economic assets within the mitigated flood risk zone (MFRZ), defined as the area within the pre-project 100 year flood zone, and outside the post-project 100 year flood zone; • For earthquake protection projects: estimated reduction in				

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
		loss (people not killed and savings of economic assets) to be achieved by the project; • For early warning systems: the number of people within the area served by an early warning system; • For planning activities: the estimated reduction in loss (people not killed and savings of economic assets) achieved by improved hazard planning; • For capacity building activities: number of institutions and people trained in improved risk management practices. Verification will be based among other things on: completion of project, adherence to the FA and adherence to the technical specifications as defined in the application documents that were used to define the reference values and disaster risk reduction targets.				
6	Minimum percentage of entities responsible for implementation and their partners having received	DLI6 measures the percentage of entities responsible for the implementation of sub-projects financed by the FLCN who received technical	No	Program Progress Report/ Secretariat	IGAT	The Government of Morocco provides evidence of technical assistance and/ or training received. DLI results and the accuracy of the information will be independently verified.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	Verification Entity	Procedure
	technical assistance and/or training	assistance and/ or training relative to the total number of implementing agencies. The Steering Committee provides evidence that entities responsible for implementation have received technical assistance and/ or training each year in either technical or fiduciary or social or environment areas, per an *Annual Capacity Building and Training Plan*. Each year (starting in the second year) an Annual Capacity Building and Training Plan is developed that targets specific capacity building and training needs for entities responsible for implementation and their partners). *Receiving technical assistance or training* is defined for the purposes of this DLI as have received at least one training event (at a minimum one person attending one training event) or a technical assistance (consulting services mobilized) in either technical or fiduciary or social or environment areas relevant to the Program.				
7	Adoption of the catastrophic risk	Yr 1: The draft catastrophic risk insurance law is	No	Program Progress Report,	SAI	The Government, through MEF/ACAPS, provides evidence of actual approval of

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	**Verification Entity**	**Procedure**
	insurance legislative and regulatory framework and minimum number of people in the Program Area insured for bodily injuries against catastrophic events	transmitted by the General Secretary of the Government (*Secrétariat Général du Gouvernement*) to the relevant Ministries, and is adopted by the Government Cabinet (*Conseil du Gouvernement)* Yr 2: The draft catastrophic risk insurance law is transmitted to the Parliament, and the implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law are prepared by the MEF and ACAPS Yr 3: The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law are adopted by the Government. Yr 4–5: Actual coverage of people by the catastrophic risk insurance achieved. The insurance program will provide coverage against property damage and bodily injury (permanent disability or death). Evidence shall rely on the number of people covered for bodily injury, and data on the current insurance market in Morocco; such that		including specific information on insurance aspects and copies of the draft law and copies of implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law. MEF/ACAPS.		the draft law, and preparation and adoption of implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law. The Government also provides written detailed evidence on the coverage provided by the catastrophic risk insurance law, such as number of auto and property insurance policies sold. DLI results and accuracy of information will be independently verified.

#	DLI	Definition/ Description of achievement	Scalability of Disbursements (Yes/No)	Protocol to evaluate achievement of the DLI and data/result verification		
				Data source/agency	**Verification Entity**	**Procedure**
		number of automobile liability insurance policies sold, number of residential property insurance policies sold. *Actual coverage* means the number of people in the Program Area insured for bodily injury against catastrophic events.				
8	Establishment and operationalization of the FSEC to protect the uninsured	Yr 2: The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are prepared by the MEF and ACAPS. Yr 3: The implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are adopted by the Government. Yr 4: FSEC received initial financial contributions as per the provisions of the catastrophic risk insurance law	No	Program Progress Report, copies of legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC, MEF/ACAPS	SAI	The Government, through MEF/ACAPS, provides evidence of actual approval of the draft law, and preparation and adoption of implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC. The Government also provides written detailed evidence on the first financial contributions to the FSEC. DLI results and accuracy of information will be independently verified.

Table 3. Bank Disbursement Table

		financing allocated to the DLI	*DLI Achievement*	*value to be achieved to trigger disbursements of Bank Financing*	*value(s) expected to be achieved for Bank disbursements purposes*	*disbursed against achieved and verified DLI value(s)* [4]
1	The FLCN strategic orientation and governance structure are redesigned with a focus on disaster risk reduction	35	Before closing date except for year 1, 2, and 3 where the DLI value needs to be met in each year	n.a.	n.a.	Pass/ fail Yr 1 disbursements a) (US$8 million) based on evidence of preparation of: i) the draft provisions to be included in the Borrower's 2017 budget law, regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) draft circulars *(Circulaires*) to be issued by the MoI regarding the establishment of the National Selection Commission and the Secretariat. b) (US$7 million) based on evidence that the Minister of Interior has decided on the annual allocation from the FLCN for the financing of Eligible Sub-projects. Yr 2 disbursements a) (US$7 million) based on evidence that (i) the Borrower's 2017 budget law includes provisions regarding the establishment of the Steering Committee, and the inclusion of local governments (*collectivités territoriales*) among the beneficiaries of FLCN financing; and (ii) circulars *(Circulaires*) regarding the establishment of the National Selection Commission and the Secretariat have been issued by the MoI b) (US$7 million) based on evidence that an interactive FLCN website that provides public access to information, handles grievances, and reports on the M&E system, has been created. Yr 4 disbursements (US$3 million) based on

#	DLI	Bank financing allocated to the DLI	Deadline for DLI Achievement	Minimum DLI value to be achieved to trigger disbursements of Bank Financing	Maximum DLI value(s) expected to be achieved for Bank disbursements purposes	Determination of Financing Amount to be disbursed against achieved and verified DLI value(s) [4]
						evidence that the Steering committee, the National Selection Commission, the Secretariat and the FLCN website are maintained. In addition a national integrated DRM and resilience strategy prepared by the Steering Committee. Yr 5 disbursements (US$3 million) based on evidence that the Steering Committee, the National Selection Commission, the Secretariat and the FLCN website are maintained. In addition, the national integrated DRM and resilience strategy was adopted by the Steering Committee.
2	Cumulative amount of FLCN funds allocated to eligible subprojects focusing on risk reduction	25	Before closing date	MAD 100 million	MAD 850 million	Formula-based Yr 1–Yr 5 disbursements will be made based on evidence of allocation of FLCN funds to eligible risk reduction subprojects. For each MAD 1,000 of FLCN allocation to eligible risk reduction subprojects, US$ 29.4 may be made available for withdrawal by the Borrower. The actual disbursement in each year is calculated according to: Formula: *Loan amount allocated to the DLI divided by the DLI end-line value for CY20 multiplied by the number by which the actual result achieved for a given CY exceeds the results achieved for the previous CY.* In addition, for withdrawals to be made available to the Borrower, every year at least MAD 100 million will need to be allocated to eligible risk reduction subprojects from the

#	DLI	Bank financing allocated to the DLI	Deadline for DLI Achievement	Minimum DLI value to be achieved to trigger disbursements of Bank Financing	Maximum DLI value(s) expected to be achieved for Bank disbursements purposes	Determination of Financing Amount to be disbursed against achieved and verified DLI value(s) [4]
						FLCN.
3	Minimum percentage of FLCN funds allocated to eligible non-structural subprojects	8	DLI value needs to be meet in each year starting from the second year	≥ 10%	≥ 10%	Pass/ fail Yr 2–Yr 5 disbursements (US$2 million in each year) based on evidence that the specified percentage of FLCN funds are allocated to eligible non-structural subprojects. In addition, for withdrawals to be made available to the Borrower, every year at least MAD 100 million will need to be allocated to eligible risk reduction subprojects from the FLCN (minimum condition for disbursement under DLI 2).
4	Minimum percentage of total funding of eligible subprojects provided by the entities responsible for implementation and their partners	22	DLI value needs to be met in each year starting from the second year	30%	50%	Pass/ fail Yr 2–Yr 3 disbursements (US$8 million in each year) based on evidence that a minimum level of additional funding was mobilized for subprojects co-financed by the FLCN. Yr 4–Yr 5 disbursements (US$3 million in each year) based on evidence that a minimum level of additional funding was mobilized for subprojects co-financed by the FLCN. In addition, for withdrawals to be made available to the Borrower, every year at least MAD 100 million will need to be allocated to eligible risk reduction subprojects from the FLCN (minimum condition for disbursement under DLI 2).
5	Cumulative value of total funding of completed	40	Before closing date	0	MAD 600 million	Formula-based. Yr 3–Yr 5 disbursements will be made based on

#	DLI	Bank financing allocated to the DLI	Deadline for DLI Achievement	Minimum DLI value to be achieved to trigger disbursements of Bank Financing	Maximum DLI value(s) expected to be achieved for Bank disbursements purposes	Determination of Financing Amount to be disbursed against achieved and verified DLI value(s) [4]
	eligible subprojects achieving disaster reduction targets					evidence that the FLCN co-financed eligible subprojects achieve risk reduction targets. For each MAD 1,000 completed works of eligible risk reduction subprojects, US$66.7 may be made available to the Borrower. The actual disbursement in each year is calculated according to: Formula: *Loan amount allocated to the DLI divided by the DLI end-line value for CY20 multiplied by the number by which the actual result achieved for a given CY exceeds the results achieved for the previous CY.*
6	Minimum percentage of entities responsible for the implementation of eligible subprojects having received technical assistance and/or training.	10	DLI value needs to be met in each year starting from the second year	50%	50%	Pass/ fail <u>Yr 2 disbursements</u> (US$4 million) based on evidence that the minimum percentage of entities responsible for implementation of eligible subproject have received technical assistance and/ or training. <u>Yr 3–5 disbursements</u> (US$2 million) based on evidence that the minimum percentage of entities responsible for implementation of eligible subproject have received technical assistance and/ or training.
7	Adoption of the catastrophic risk insurance legislative and regulatory framework and minimum number of people in the	34.5	Before closing	5.85 million people	> 5.85 people in years	Pass/ fail <u>Yr 1 disbursement</u> (US$14.5 million) based on evidence that the draft catastrophic risk insurance law is transmitted by the General Secretary of the Government (*Secrétariat Général du Gouvernement*) to the relevant Ministries, and is adopted by the Government

#	DLI	Bank financing allocated to the DLI	Deadline for DLI Achievement	Minimum DLI value to be achieved to trigger disbursements of Bank Financing	Maximum DLI value(s) expected to be achieved for Bank disbursements purposes	Determination of Financing Amount to be disbursed against achieved and verified DLI value(s) [4]
	Program Area insured for bodily injuries against catastrophic events		date	in years 4 and 5	4 and 5	Cabinet (*Conseil du Gouvernement).* Yr 2 disbursement (US$7 million) based on evidence that the draft catastrophic risk insurance law is transmitted to the Parliament, and the implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law and providing for the effectiveness of the insurance scheme, are prepared by the MEF and ACAPS. Yr 3 disbursement (US$5 million) based on evidence that the implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law and providing for the effectiveness of the insurance scheme, are adopted by the Government. Yr 4 disbursement (US$8 million) based on evidence that at least 5.85 million people are insurance for bodily injuries against catastrophic events, as per the catastrophic risk insurance law.
8	Establishment and operationalization of the FSEC to protect the uninsured	25	Before closing date	n.a.	n.a.	Pass/ fail Yr 2 disbursement (US$9 million) based on evidence that the implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment of the FSEC are prepared by the MEF and ACAPS Yr 3 disbursement (US$8 million) based on evidence that implementation legal documents referred to in Article 71 of the draft catastrophic risk insurance law regarding the establishment

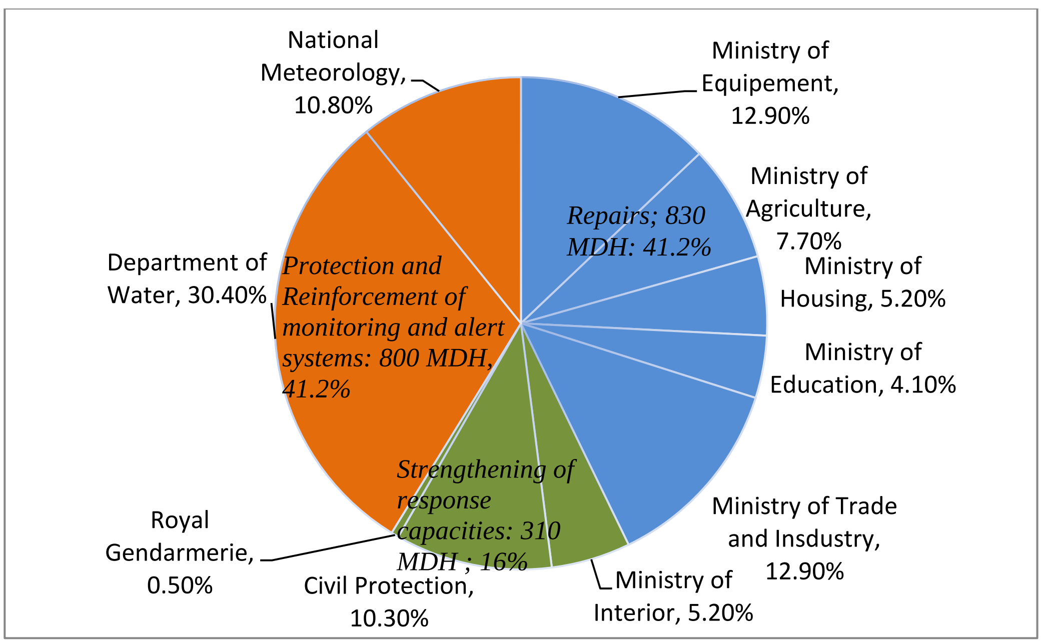
*# *	***DLI***	***Bank financing allocated to the DLI***	***Deadline for DLI Achievement***	***Minimum DLI value to be achieved to trigger disbursements of Bank Financing***	***Maximum DLI value(s) expected to be achieved for Bank disbursements purposes***	***Determination of Financing Amount to be disbursed against achieved and verified DLI value(s)*** [4]
						of the FSEC are adopted by the Government. Yr 4 disbursement (US$8 million) based on evidence that the FSEC received initial financial contributions as per the provisions of the catastrophic risk insurance law.

Note: n.a. = Not applicable.

Annex 3: Past Expenditures and Activities of the FLCN (2009-2014)

The FLCN was established by the 2009 Budget Law as a dedicated budget line (CAS, *Compte d'Affection Spéciale*) within the MoI, in response to a series of natural catastrophes in Morocco, specifically the floods in Gharb province in 2008. The total budget of the CAS-FLCN for the period 2009-2012 was MAD 1960 million (USD 228 million), composed of an initial MAD 861 million donation from Saudi Arabia in the immediate aftermath of the 2008 floods, MAD 300 million from the Hassan II Fund for Economic and Social Development and MAD 800 million from the national budget over this four year period (MAD 200 million per year). A total of MAD 830 million or 43% of the funds went to reconstruction and repair of areas affected by the floods (e.g., damaged roads, irrigation infrastructure, emergency program for housing flood victims and housing reconstruction, and support for post-disaster business re-startup). In addition, funds were allocated to pre-disaster risk reduction measures and preparedness, including flood protection works and construction or improvement of weather stations for improved quality and accuracy of weather forecasts. This preventative investment portion represented MAD 800 million or 40% of the FLCN's 2009-2012 budget resources. The remaining MAD 310 million (17%), was spent for emergency response preparedness, including equipment for the Civil Protection. Flood protection works were constructed at 50 high priority locations in Tanger Fnideq, Nador, Al Hoceima, Boulemane and Oujda. Other measures included the extension of weather radar coverage, installation of flood warning dissemination systems, improving the density of the weather observation network, strengthening the network of automatic observation systems, improving numerical weather prediction models, development of data collection, and dissemination systems, bulletins and weather alerts. As an example, the FLCN has also participated in funding, together with eight other central and local government departments and public agencies, the construction of an underground tunnel of 7 km ("Super Collecteur Ouest") able to enhance the drainage capacities of the City of Casablanca and evacuate excessive water flow towards the Atlantic Ocean. The construction started in 2014 and should be completed by 2017.

Figure 1. FLCN allocations between 2009 and 2013



FINANCE ACT N ° 40-08 FOR FISCAL YEAR 2009

Creation of a special account entitled "Fund to fight against the effects of natural disasters" (FLCN)
Article 16a
I. In order to enable the recording of transactions relating to the fight against the effects of natural disasters, as of 1 January 2009, a special account is created, entitled "Fund to fight against the effects of natural disasters" whose authorizing officer is the Minister of Interior.

II. This account will trace:

Credit:
- The allocations from the general budget;
- Resources from the Hassan II Fund for Economic and Social Development ;
- Donations , legacies, grants and various contributions ;
- Other resources available to that fund in accordance with the laws and regulations

Debit:
- Expenditures for emergency response operations ;
- Expenditure on relief and assistance to the affected populations;
- Expenditures for programs aiming to improve the response capacities of the agencies specialized in the fight against the effects of natural disasters;
- Expenditures for restoration or rebuilding of facilities that were damaged by natural disasters;
- Expenditures for the construction of various prevention infrastructures;
- Expenditures necessary to the fight against the effects of natural disasters.

III. The credits for expenses referred to above shall be paid to the budgets of ministerial departments, public institutions, businesses and special Treasury accounts involved in operations against the effects of natural disasters.

Engagement in anticipation of the special account entitled "Fund to fight against the effects of natural disasters (FLCN)