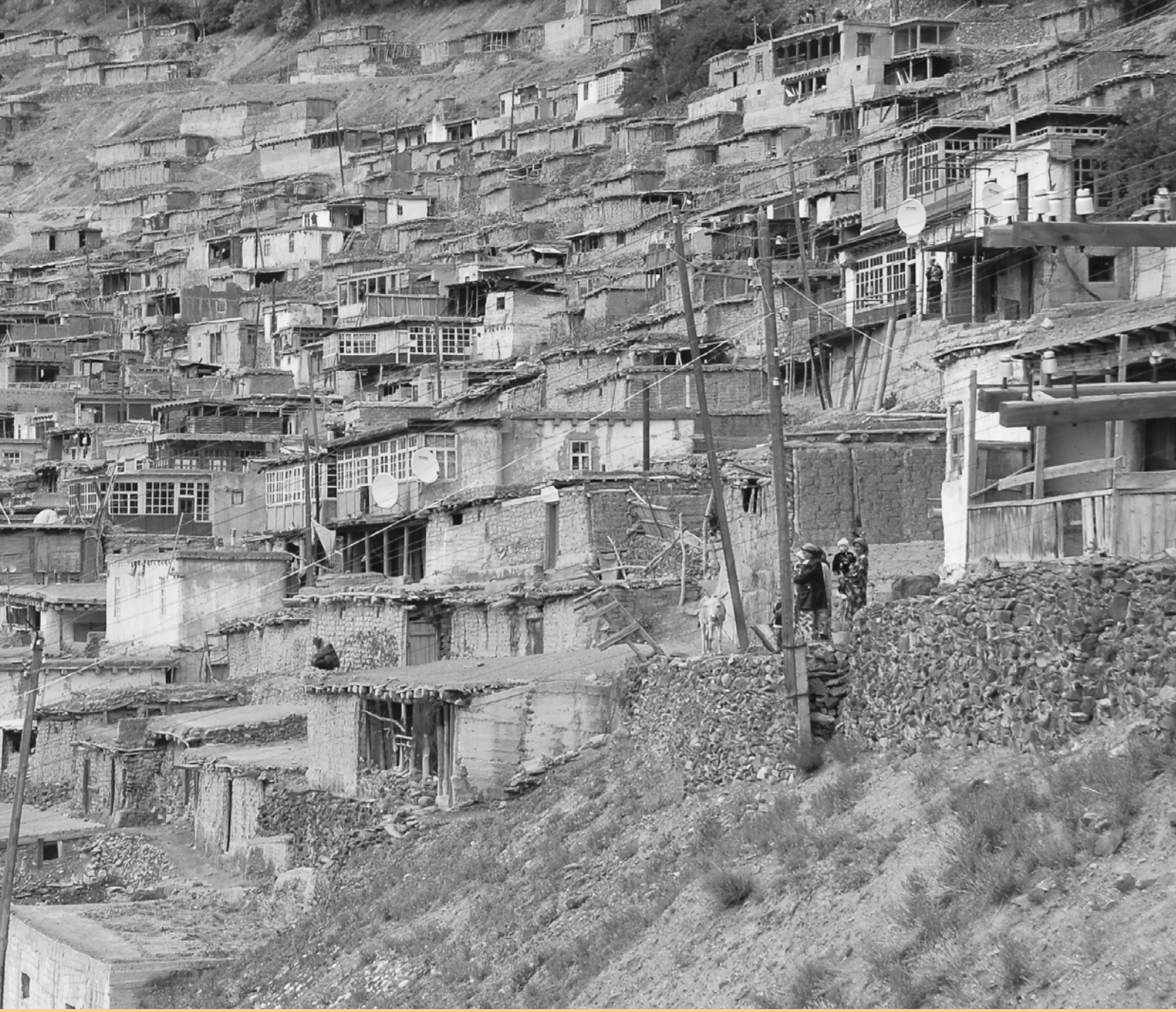

Mitigating the Adverse Financial Effects of Natural Hazards on the Economies of Central Asia

A Study of Catastrophe Risk Financing Options

THE WORLD BANK

ISDR
International Strategy for Disaster Reduction

CAREC
Central Asia Regional Economic Cooperation

Preface

The region of Central Asia[1] and the Caucasus[2] (CAC) is highly vulnerable to disasters caused by the impact of natural hazards. The occurrence of natural hazards in all eight countries of the two sub-regions is very high; substantial parts of the territory are covered by mountains and practically all natural hazards, such as earthquakes, landslides, debris flows, avalanches, floods and droughts, are present. Climate change is expected to exacerbate disasters caused by the impact of natural hazards associated with hydro-meteorological conditions, with associated damage particularly impacting the rural economy. The region is also exposed to a range of technological disasters, such as industrial accidents, hazardous mine tailings entering downstream water bodies, and potential downstream impacts resulting from the operation of large water reservoirs.

Both sub-regions are not only geographically and geologically disaster-prone but they also have limited financial resources and physical resilience. Central Asia (CA) and Caucasus governments are fiscally unprepared to deal with catastrophic losses. Because of this high vulnerability, and the relatively small size of most of the CAC countries, it will be more efficient and economically prudent for the region's countries – traditionally with long historical links between them – to cooperate in the areas of civil protection, and disaster preparedness and prevention.

With the aim of reducing the vulnerability of the CAC region to the risks of disasters, and within the context of the Global Facility for Disaster Risk Reduction (GFDRR), the World Bank and United Nations International Strategy for Disaster Reduction (UNISDR) – under the umbrella of the Central Asian Regional Economic Cooperation Program (CAREC) and in collaboration with other international partners, such as (for hydrometeorology) the World Meteorological Organization (WMO) – have initiated the Central Asia and Caucasus Disaster Risk Management Initiative (CAC DRMI), which is in line with the Hyogo Framework for Action 2005-2015 (HFA).

CAC DRMI incorporates three focus areas, with the possibility to include new activities: (i) coordination of disaster mitigation, preparedness and response; (ii) financing of disaster losses, reconstruction and recovery, and disaster risk transfer instruments such as catastrophe insurance and weather derivatives, and (iii) hydro-meteorological forecasting, data sharing and early warning (in close partnership with the WMO and the Finnish Hydromet Institute). The initiative will form the foundation for regional and country-specific investment priorities in the areas of early warning, disaster risk reduction and financing. The initiative will build on the existing cooperation that already exists in the region, and will complement and consolidate the activities of the institutions involved to promote more effective disaster mitigation, preparedness and response. These institutions include international finance institutions, the European Union (EU), the Council of Europe, the United Nations [notably the United Nations Development Programme Bureau for Crisis Prevention and Recovery (UNDP/BCPR), the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and the United Nations Children's Fund (UNICEF)], regional cooperation institutions such as the Economic Cooperation Organization (ECO), and bilateral donors such as the Swiss Development Cooperation (SDC) and the Japan International Cooperation Agency (JICA).

The present report, *A Study of Catastrophe Risk Financing Options*, aims to assess the extent to which the existing intra-country government-funded social safety nets and the private insurance industry can cope with the adverse financial effects of disasters caused by the impact of natural hazards on the regional economy. Based on the outcomes of the assessment carried out in the five countries of Central Asia, the study provides policy recommendations on reshaping the existing post-disaster government social safety net programmes and extending the level of catastrophe insurance penetration for businesses and homeowners.

1 The countries of Central Asia include Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

2 The Caucasus countries include Armenia, Azerbaijan and Georgia.

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Abbreviations and Acronyms

AAL	Average Annual Loss
ADB	Asian Development Bank
BCPR	Bureau for Crisis Prevention and Recovery
BI	Business Interruption Policy
CA	Central Asia
CAC	Central Asia and the Caucasus
CAREC	Central Asian Regional Economic Cooperation Program
CIS	Commonwealth of Independent States
CRIF	Catastrophe Risk Insurance Facility
DRMI	Disaster Risk Management Initiative
ECO	Economic Cooperation Organization
EU	European Union
GDP	Gross Domestic Product
GNP	Gross National Product
GFDRR	Global Facility for Disaster Risk Reduction
HFA	Hyogo Framework for Action
IBRD	International Bank for Reconstruction and Development
IFI	International Finance Institutions
IT	Information Technology
JICA	Japan International Cooperation Agency
NGO	Non-Government Organisation
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
P&C	Property and Casualty
PML	Probable Maximum Loss
SDC	Swiss Agency for Development and Cooperation
SECE	Southeastern and Central Europe
SEE	South Eastern Europe
SME	Small and Medium Enterprises
TCIP	Turkish Catastrophe Insurance Pool
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
WMO	World Meteorological Organization

Executive Summary

Central Asia's risk exposure to natural hazards

This study comprises a review of government post-disaster safety nets as well as those provided by the private insurance market in the five countries of Central Asia, namely Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The frequency and severity of major natural hazards and the levels of economic and insured losses caused by them have increased considerably in the countries of Central Asia, in line with the pattern world-wide. The region is vulnerable to a number of disasters caused by natural hazards, such as earthquakes, floods, landslides/mudslides/debris flows, avalanches, strong winds/wind-storms and extreme temperature fluctuations.

A recent preliminary hazard risk assessment – *the Central Asia and Caucasus Disaster Risk Mitigation and Adaptation Initiative (CAC DRMI), Synthesis Report on CAC Countries Disaster Risk Assessment (2009)*[3] – of the five countries of Central Asia indicates that regional economic losses from disasters caused by natural hazards may range from $1.2 billion to $3.5 billion from events with return periods of 20 to 200 years, respectively. Most of these losses can be attributed to the risk of earthquakes, which are the most catastrophic hazards of all. While averages in the case of severe and infrequent catastrophic events can be misleading they nevertheless confirm that, with an economic average annual loss (AAL) of $186 million, earthquakes are the dominant risk in the region, followed by floods ($52 million), landslides ($18 million) and droughts ($6 million). Yet, in terms of frequency of events, floods were the most common peril (1.35 occurrences per year), followed by earthquakes (1.2) and landslides (1.0)[4].

The most catastrophic events in the region over the last 50 years are summarized in Table A, which provides estimates of affected population and economic losses in terms of both the estimated economic losses reported at the time of the event and their 2009 equivalents. It should be noted that the table does not include the 1911 Almaty earthquake, which is known to have reduced the city to ruins but for which no reliable loss statistics are available.

Table A: Recent notable disaster events in the Central Asia sub-region

Date	Type of disaster	Affected population	Economic Loss[1] ($ million)
26/04/1966	Tashkent earthquake, Uzbekistan	100,000	300/1,965
13/10/1985	Mag. 5.9 earthquake, Tajikistan	8,080	200/394
19/08/1992	Mag. 7.3 earthquake, Jalalabad, Kyrgyzstan	86,806	130/197
25/05/1992	Tajikistan flood	63,500	300/454
8/5/1993	Dushanbe region flood, Tajikistan	75,357	149/219
/06/2000	Central Asia region drought	3,600,000	107/132

Source: CAC DRMI desk study review 2009
Notes: (1) The column provides both the estimated economic losses reported at the time of the event and in 2009 terms.

However, despite the growing economic losses from disasters caused by natural hazards in the region, so far over

3 Henceforth referred to as the CAC DRMI desk study review 2009.

4 CAC DRMI desk study review 2009.

99 per cent of households and businesses remain uninsured against such hazards, while governments are fiscally ill-prepared to face the economic losses from such large catastrophic events.

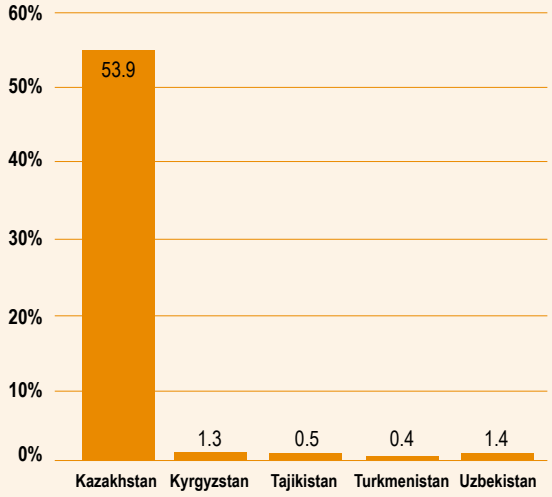
While the social and economic effects of disasters caused by natural hazards on the national economies of Central Asian countries can be multi-faceted and complex, the following key manifestations can be distinguished:

- *Adverse impacts of natural hazards on countries' fiscal stability and macro-economic performance*. Disasters caused by natural hazards are increasingly affecting the ability of countries to satisfactorily implement national fiscal programmes. With the growing frequency and severity of catastrophic events, it is becoming increasingly difficult to cover their economic costs from recurring country budgets. Even though every CA country, except for Turkmenistan, makes annual budget appropriations for emergency expenditures, often the actual budgetary outlays on such events are well in excess of budgeted amounts. To finance losses from large disasters caused by natural hazards countries typically make additional emergency budgetary appropriations, which are funded either by budgetary reallocations or by increasing budget deficits through borrowing. To indicate the magnitude of the problem, Figure A presents a ratio of economic losses from the modelled large catastrophic events in CA countries to the amount of annual budgetary appropriations for emergencies in 2008-9. As can be seen, the mismatch between the planned annual budgetary appropriations and the size of potential economic losses caused by large catastrophic events is rather striking. For instance, in all countries but Kazakhstan it would take between 100-200 annual planned emergency budgetary allocations to cover the economic losses from a severe catastrophic event with a 200-year return period. But even the largest of all, the Kazakh budgetary emergency fund, can cover only about 50 per cent of damages from an earthquake with a return period of 200 years.

- *Adverse social implications of disasters caused by natural hazards on the population*. In the absence of effective post-disaster government social safety nets and a well-functioning catastrophe insurance market, almost all homeowners and small businesses would have to rely on their own resources to recover from major catastrophic events. Given the low income levels, and the impaired country economic growth prospects due to the global economic crisis, any post-disaster economic recovery is likely to be long and painful, particularly for the poor.

Besides adversely affecting their fiscal stability, large natural catastrophes may also have profound implications for the CA countries' macro-economic performance and their overall global economic competitiveness.

Figure A:
Emergency Funds/Economic Loss from a 200 - Year Event (%)



Fiscal disaster risk financing mechanisms at country level

In all surveyed CA countries, national annual budgetary allocations for emergencies, no matter how small, are the only source of funding to deal with the consequences of natural hazards. All national emergency funds are annual non-accruing funds, meaning that they maintain the same statutory size in budget percentage terms and cannot be accumulated or carried forward from one year to another.

Emergency assistance aid can be made available to households, businesses and local governments in all surveyed CA countries. None of the surveyed countries has a means-testing requirement as a precondition for emergency assistance. Overall, there is no clear delineation of government and private sector liabilities when it comes to funding economic damages in the aftermath of a disaster.

Due to rather limited financial resources, disaster funds can only reimburse a small fraction of total losses sustained by people affected by disasters. These amounts vary from a few hundred United States Dollars (in Kyrgyzstan, Uzbekistan, Turkmenistan and Tajikistan) to about $1,000 in Kazakhstan.

The administrative process involved in mobilizing additional resources in cases of major disasters caused by the impact of natural hazards appears to be cumbersome, lengthy and complex, and as a result rather time-consuming.

The role of private catastrophe insurance in disaster risk financing in Central Asia

Despite their severe exposure to natural hazards, catastrophe insurance coverage of assets belonging to individuals and small businesses in CA countries is virtually non-existent – of the order of 1 per cent. As the property and casualty (P&C) insurance industry in CA countries is still small and undeveloped, a very small percentage of the population voluntarily buys insurance products. Property insurance in general and catastrophe insurance in particular are no exception. On average the number of households with a property insurance policy rarely exceeds 1 per cent, although due to the local industry practices most of those with property insurance coverage (over 90 per cent) typically have catastrophe insurance protection.

Although the cost of catastrophe insurance coverage is rather low, around €20-30, few homeowners buy it. One of the possible explanations may be that catastrophe covers cannot be bought separately in any CA market and have to be bundled with a home-owners' policy. Once combined, the total costs of both covers can be well in excess of €80-100 per year, which may create an affordability barrier for many households.

Low disposable incomes and the lack of trust among the general population in insurance companies is yet another factor hindering the development of the personal insurance lines market in the region. The poor claims payment record of many local insurers in combination with enduring memories of the Soviet insurance organizations, such as Gosstrakh and Ingostrakh (which were perceived as types of Government tax agents in the guise of insurers), presents a major obstacle to the expansion of the insurance market.

On the supply side, due to the small size of the catastrophe insurance premium collected by insurers, some companies find it difficult to find reinsurance protection. This may be a limiting factor that prevents companies from marketing catastrophe insurance coverage more aggressively.

While insurance regulators in CA lack the necessary tools and expertise in understanding the true risk exposures of regulated companies to catastrophe risk, most insurance companies do not have the necessary underwriting, actuarial and reinsurance skills to offer coverage against natural hazards. The majority of companies do not buy any reinsurance protection for their risk accumulations, while those which do buy reinsurance end up placing their covers with non-rated carriers[5] in Russia and Ukraine, which are ready to accept the risk at a very low rate. Most reinsurance coverage is bought on the quota-share basis. Very few companies buy any excess of loss coverage and only two companies acquired catastrophe excess of loss protection. To a certain extent this poor reinsurance protection situation can be explained by the fact that in all Central Asian markets, except Kazakhstan, the premium rates charged by insurers for providing all-risk property coverage are grossly inadequate to cover the costs of risk. Only foreign-owned companies monitor their catastrophe risk accumulations and use modelled estimates of risk to determine their probable maximum loss from catastrophic events with different return periods. Most insurers in the market do not have any reliable quantitative estimates of their peak risk exposures [Probable Maximum Loss (PML) for given return periods], which makes them financially vulnerable to large catastrophic events.

The lack of effective insurance supervision along with the cut-throat competition for new business has resulted in very low premium rates for all-risk property coverage charged by Central Asian insurers. Although on the surface this may be good news to consumers, in reality inadequate premium rates mean that companies will not be able to afford to place reinsurance cover with credible reinsurance companies and hence will have to retain most if not all the risk themselves. This endangers their ability to pay claims in the case of a catastrophic event.

5 Non-rated insurers are defined as those which do not have investment grade ratings from either of four internationally-recognized rating companies such as S&P, Moody's, Fitch or A.M. Best.

Conclusions and policy recommendations

Despite considerable risk exposure to disasters caused by natural hazards, the existing risk financing mechanisms in the countries of Central Asia do not have the capacity to address the consequences of large catastrophic events. Hence, reducing the adverse financial impact of disasters caused by natural hazards on governments, businesses and households in the region must be regarded as an important economic and social priority at the national and regional level. Investing in the development of market-based catastrophe risk transfer systems at both national and regional levels will bring numerous economic and fiscal benefits. In the case of governments, national and regional risk transfer programmes will help reduce the contingent fiscal liabilities of governments arising out of their excessive risk exposure to natural hazards, enable them to receive access to immediate liquidity in the aftermath of catastrophic events, and help to mitigate the adverse impacts of natural hazards on fiscal stability and economic growth. In the case of households, access to affordable market-based catastrophe insurance will serve as an important financial safety net that will help millions of homeowners to protect their life-time savings embedded in house equity and hence avoid financial ruin. For businesses, access to catastrophe insurance will reduce the adverse impacts of natural hazards on their earnings and hence will reduce the cost of borrowing and result in improved business valuations.

Several recommendations emerge from this study. They are intended to guide government policymakers in developing and applying national and regional disaster risk financing strategies, suggest ways in which World Bank staff and managers can better address catastrophe risk financing in their dialogue with clients, and provide information and ideas that may be of value to other stakeholders, such as international donor organizations, non-government organizations (NGOs), academics and the general public.

Lessening the impact of disasters caused by natural hazards on government budgets. The devastation caused by numerous past earthquakes in the region clearly demonstrates that large disasters caused by natural hazards can be very costly and can have major negative impacts on national economies and government budgets. However, no government in the region, except perhaps that of Kazakhstan, has adequate fiscal capacity of its own to cope with the financial consequences of large catastrophic events. But even in the case of Kazakhstan, despite its relatively large budgetary allocation earmarked for national emergencies, the maximum post-disaster aid to victims of disasters caused by natural hazards is unlikely to exceed $1,000 per household, which places the financial burden of housing reconstruction squarely on the shoulders of affected homeowners and businesses.

To address government fiscal exposure to disasters caused by natural hazards, countries may consider putting in place stand-by ex-ante disaster risk financing mechanisms, which would grant them immediate access to liquidity in the case of disasters caused by natural hazards. Stand-by credit facilities, also known as contingent capital, can now be obtained from both the International Bank for Reconstruction and Development (IBRD) and the Asian Development Bank (ADB).

Reducing the financial vulnerability of homeowners and small and medium enterprises (SMEs) to natural hazards. Despite major loss potentials from disasters caused by natural hazards, this study documents an almost non-existent level of catastrophe insurance coverage among homeowners and SMEs in Central Asian countries.

In this context, the countries of Central Asia should consider instituting a regional catastrophe insurance pool that would act as a regional aggregator of catastrophe risk and help governments access the global reinsurance market on better pricing terms. The risk pooling arrangement for the Central Asian countries could be modelled after the regional Southeastern and Central Europe Catastrophic Risk Insurance Facility (SECE CRIF), which is currently being developed by the World Bank, UNISDR and the Regional Cooperation Council for South Eastern Europe (SEE) countries.

It may also be advisable for the countries of the region with larger-size economies, such as Kazakhstan and Uzbekistan, to consider creating national catastrophe insurance pools which can provide efficiently-priced standalone catastrophe insurance to homeowners and small business owners. As has been demonstrated by international experience, such programmes can provide highly-affordable coverage by realizing the benefits of country-wide risk diversification, economies of scale and the ability to obtain better pricing terms from the global reinsurance market. The first country-

wide catastrophe risk pool in an emerging market, the Turkish Catastrophe Insurance Pool (TCIP), was pioneered and successfully launched by Turkey in 2000 with the World Bank's assistance. The work on a similar programme in Romania has reached a fairly advanced stage.

The relatively large size of the Kazakhstan economy and the more advanced state of development of its insurance market may also provide for the development of a regional catastrophe insurance scheme on the basis of a national Kazakh catastrophe insurance programme. Such a programme could be extended to other countries in the region. Unfortunately, the analysis of the insurance markets in the other Central Asian countries suggests that the creation of stand-alone individual country catastrophe insurance pools is unlikely to be economically and technically feasible.

I Introduction

The impact of disasters caused by natural hazards on Central Asia

This study comprises a review of government post-disaster safety nets as well as those provided by the private insurance market in the five countries of Central Asia.

In common with the pattern world-wide, Central Asia has experienced an increase in the frequency and severity of major natural hazards and the economic and insured losses caused by them. The region is vulnerable to a number of natural hazards, including earthquakes, floods, landslides, avalanches, storms and extreme temperature fluctuations.

The recent preliminary hazard risk assessment, the *CAC DRMI desk study review 2009*, of Central Asia indicates that regional economic losses from disasters caused by natural hazards may range from $1.2 billion to $3.5 billion from events with return periods of 20 to 200 years, respectively. Most of these losses can be attributed to earthquakes, which cause the most catastrophic disasters of all. While averages in the case of severe and infrequent catastrophic events can be misleading, they confirm that with an economic AAL of $186 million earthquakes are the dominant risk in the region, followed by floods ($52 million), landslides ($18 million) and droughts ($6 million).

However, despite the growing economic losses from natural catastrophes in the region, so far less than 1 per cent of households and businesses are insured against natural hazards, while governments are fiscally ill-prepared to face economic losses from large catastrophic events.

Objectives, scope and methodology of the study

The main objectives of the study are two-fold. Firstly, the study attempts to establish the extent of the financial vulnerability of governments and households to natural hazards in the five countries of Central Asia by examining:

- The financial capacity of individual Central Asian countries to cover the costs of disaster relief, reconstruction and recovery efforts from their own fiscal resources.

- The extent of catastrophe insurance coverage provided by the private insurance industry in the region as well as the technical capacity of country insurance industries to host national catastrophe insurance schemes.

Secondly, besides documenting the current state of government and market-based safety nets for homeowners and SMEs affected by disasters caused by natural hazards, the study also suggests a range of practical solutions and policy recommendations with a view to reducing the financial vulnerability of the region to disasters caused by natural hazards.

The study is intended for four principal audiences: government officials in Central Asian countries; World Bank staff involved in disaster risk financing and reconstruction projects; the international development community; and the private insurance and reinsurance industry.

This report was prepared based on a series of written surveys that were followed by interviews with key government officials, government experts and insurers in Central Asian countries.

The structure of the report is as follows: Chapter I is an introduction; Chapter II presents an overview of the state of catastrophe insurance markets in Central Asia; Chapter III examines the fiscal capacity of Central Asian economies to cope on their own with large catastrophic events; and Chapter VI presents the main findings and policy recommendations of the study.

II Survey of Catastrophe Insurance Markets in Central Asia

Central Asia's risk exposure to natural hazards

Central Asia is highly vulnerable to disasters caused by natural hazards such as earthquakes, floods, landslides/mudslides/debris flows, avalanches, strong winds/wind-storms and extreme temperatures. The most catastrophic events in the region over the last 50 years are summarized in Table 1, which provides estimates of affected population and economic losses in terms of both the estimated economic losses reported at the time of the events and their 2009 dollar equivalents.

Table 1: Recent notable disaster events in Central Asia

Date	Type of disaster	Affected population	Economic Loss[1] ($ million)
26/04/1966	Tashkent earthquake, Uzbekistan	100,000	300/1,965
13/10/1985	Mag. 5.9 earthquake, Tajikistan	8,080	200/394
19/08/1992	Mag. 7.3 Jalalabad earthquake, Kyrgyzstan	86,806	130/197
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/06/2000	Central Asia region drought	3,600,000	107/132

Source: CAC DRMI desk study review 2009
Notes: (1) The column provides both the estimated economic losses reported at the time of the event and in 2009 terms.

The recent CAC DRMI desk study (2009) hazard risk assessment indicates that with an economic AAL estimated at $186 million, earthquakes are the dominant risk in Central Asia, followed by floods, landslides and droughts. In terms of the probable maximum economic loss potentials from disasters caused by natural hazards with different return periods, the loss statistics are quite staggering. For example, as shown in Table 2, the annual economic loss potential from several major catastrophic events (such as big floods and earthquakes) with a frequency of 0.5 per cent is estimated at $3.49 billion, or 2.39 per cent of regional GDP.

Table 2: Economic loss potential from catastrophe events on the regional economy

Economic Loss Potential (1988-2007)		
Annual exceedance probability	Economic loss ($ million)	Percentage to GDP (2007)
0.5%	3,489	2.39
5.0%	1,192	0.81
20.0%	401	0.27

Source: CAC DRMI desk study 2009
Notes: The estimates significantly underestimate the severity of potential losses as they are based on only 20 years' of observations.

Over the last 50-plus years, earthquakes have also caused the largest number of deaths (6,683)[6], followed by floods (1,512) and landslides (700). Droughts affected the largest population (70 per cent of total affected population in the region), followed by floods (19 per cent) and earthquakes (6 per cent). Floods have the highest frequency (1.35 per year), followed by earthquakes (1.2) and landslides (1.0)[7].

Table 3 demonstrates that four of the five countries of the region are particularly financially vulnerable to natural hazards and all five stand to sustain very sizeable monetary losses in the case of catastrophic events. A comparison of economic loss potentials in the countries of Central Asia is presented in Table 3.

Table 3: Comparison of economic losses in the countries of Central Asia

Country	Average Annual Loss (AAL) $ million	Economic Loss ($ million)			Per cent of GDP		
		Annual exceedance probability			Annual exceedance probability		
		0.5%	5%	20%	0.5%	5%	20%
Kazakhstan	63	1,136	348	100	1.09	0.34	0.1
Kyrgyzstan	11	160	49	15	4.57	1.4	0.42
Tajikistan	79	776	355	139	20.92	9.56	3.75
Turkmenistan	79	1,564	433	115	12.1	3.35	0.89
Uzbekistan	92	2,128	623	177	9.5	2.8	0.8
Central Asia	264	3,489	1,192	401	2.39	0.81	0.27

Source: CAC DRMI desk study 2009
Notes: Loss estimates assume a return period of 200 years, or 0.5 per cent.

If the countries of Central Asia are ranked in terms of their financial vulnerability to disasters caused by natural hazards measured by the percentage of GDP lost from a catastrophic event with a 200-year return period (0.5 per cent probability), Tajikistan fares the worst (20.92 per cent), followed by Turkmenistan (12.1 per cent), Uzbekistan (9.5 per cent) and Kyrgyzstan (4.57 per cent). Although Kazakhstan appears to be the least financially exposed (1.09 per cent) to disasters caused by natural hazards, in our view the CAC DRMI desk study review 2009 loss estimate considerably underestimates the overall risk exposure in Almaty, which over the last 10 years has developed into a major regional commercial centre, with billions of dollars-worth of new commercial and residential construction, frequently of poor quality, added to the existing city building stock.

Risk policy coverage

The non-life insurance industry in Central Asian countries is still very small and undeveloped. Currently, a very small percentage of population regularly buys insurance products. Property insurance in general and catastrophe insurance in particular are no exception. Despite the fact that in all countries of the region, except Kazakhstan, the premium rates charged by insurance companies are grossly insufficient to cover the technical cost of risk, few homeowners buy it. The survey of regional insurers demonstrates that on average the number of households with homeowners' insurance across the region rarely exceeds 1 per cent, with Kazakhstan, where the level of insurance penetration is about 2 per cent, being a notable exception.

6 The figure accounts for only a small fraction of lives lost during the 1966 Tashkent earthquake, as the true figure was never revealed by the Soviet authorities.

7 CAC DRMI desk study review 2009.

Natural hazards covered

In all Central Asian countries insurers offer an all-risk homeowners' policy which covers property damage to private dwellings from all FLEXA (e.g. fire, lightning, explosion and aviation) and natural perils (earthquakes, floods, landslides, wind-storms, avalanches and hail, etc.), without exception. While in principle in certain country markets buyers of the FLEXA cover may choose not to buy cover for natural hazards, in practice nobody declines it as insurers do not price the risks of fire and disasters caused by natural hazards separately. Small businesses and industrial and commercial customers are covered by a similar fire and allied perils policy, but very few have bought such policies.

The scope of coverage of a special endorsement for catastrophe perils includes damages to buildings only. Large businesses can also obtain a business interruption policy (BI) for both FLEXA and natural perils.

Catastrophe insurance penetration

Despite the fact that natural perils are covered under homeowners' policies available from local insurers in all Central Asian markets, very few businesses or homeowners buy it. The situation is helped somewhat by the fact that local mortgage lenders require catastrophe insurance coverage as a loan condition. As a result, most property insurance policies sold in the region are sold to home buyers borrowing from banks affiliated with insurance companies. However, even before the current financial crisis the percentage of housing stock financed by mortgages was extremely small – under 1 per cent – and this served as a major constraint on the development of the local property insurance market. Recently, due to the global financial crisis, mortgage lending has virtually come to a halt in Central Asia as banks concerned with plummeting property values and the ability to refinance their own liabilities have stopped lending altogether.

Such a limited demand for catastrophe insurance in Central Asia can be explained by rather low incomes as well as the insufficient risk awareness of the population. Expectation of government assistance in case of a disaster and inherent mistrust of insurance companies (which is often reinforced by the limited scope of disaster insurance coverage available) are among other possible explanations of the low demand for catastrophe covers.

One other possible explanation may be that catastrophe covers cannot be bought separately in any Central Asian market and have to be bundled with a homeowners' policy. Once combined, the total costs of both covers can be well in excess of $100 per year, which may create an affordability barrier for many households.

Another reason for the low demand for insurance stems from the poor claims payment record of most insurers and the lack of confidence on the part of the population in the ability of insurers to pay claims in the case of a major catastrophic event. Unfortunately, these fears are not groundless. Due to the insufficient premium charged by local insurers for property coverage they find it difficult to afford reinsurance protection, which leaves them with no alternative but to fully retain the catastrophe risk or reinsure only a small part of the risk with low-rated insurers from the neighbouring Commonwealth of Independent States (CIS) countries. Needless to say, such business practices greatly compromise their ability to pay claims in case of a catastrophic event.

Insured limits

Insured policy limits for natural perils are typically the same as the sum insured under the underlying basic property coverage. However, the limits of coverage can vary significantly from one country to another, ranging on average from $25,000 to $200,000 for personal dwellings.

Deductibles

As deductibles are not very popular with individuals and corporations in Central Asian countries, they rarely exceed 2 per cent of the sum insured. Many companies do not have any deductibles at all for their all-risk property covers. In Kazakhstan, however, insurers do require a minimum deductible of 5 per cent for natural perils coverage and offer a 20 per cent premium discount for a voluntary deductible of 7 per cent of the sum insured and a 30 per cent discount for a deductible of 10 per cent.

Premium rates

The pricing of all-risk property covers varies significantly throughout the region based on the local market conditions and the pricing sophistication of insurers. The premiums for an all-inclusive property coverage range from 0.05 per cent to 0.35 per cent. The variation in the rates is due mainly to the level of competition in each market, rather than a reflection of the key risk factors such as earthquake zone, soil conditions, building structure and year of construction. However, in some countries insurers refuse to insure mud-made dwellings, which are most vulnerable to earthquakes.

Terms of coverage

The terms of coverage for catastrophic perils offered by the local market appear rather generous, with insurance policies covering all risks, and deductibles either low or non-existent. The policies offer coverage for damage to the building structure, and less often contents.

Indemnification basis

In covering catastrophic perils insurers are often faced with the problem of underinsurance arising out of policyholders buying less coverage than the replacement costs of their properties. To deal with this problem, insurers include underinsurance penalties into the terms and conditions of their policies which have the effect of reducing the amount of indemnity paid in the aftermath of a disaster proportionate to the rate of underinsurance[8]. However, in Central Asia most insurers choose to replace the underinsurance penalty with the first lost cover that offers the insured insurance coverage up to the sum insured without any penalty in case of underinsurance. As most insurance policies are sold in conjunction with mortgage loans, indemnification under insurance policies is designed to protect mortgage lenders against the loss or damage to their collateral that may be caused by fires or disasters caused by natural hazards.

Claims settlement

In Central Asia loss adjustment is typically carried out by loss adjustors from insurance companies, although for complex and large commercial/industrial losses external professional loss adjusters may be engaged as well. Reinsurers may also be involved if losses exceed a pre-agreed value.

In most countries of the region claim settlement is typically done either on a replacement cost or residual value basis. Compared to the first approach, the residual value approach provides for the reduction in indemnity payment by the amount of accrued depreciation. Under the approach, loss adjusters will typically estimate the real damage to the property and then compare it with the sum insured. The starting value is the book value of the damaged property from which they would deduct the accrued depreciation to arrive at the remaining reimbursable value.

Risk management

In virtually all Central Asia markets, except Kazakhstan, insurance companies do not have the necessary risk management skills and expertise to adequately manage their catastrophe risk. Although the level of insurance penetration is still small, catastrophe risk accumulations of local companies can be quite significant relative to their capital base. Yet most local insurance companies retain all catastrophe risk for the residential property business and reinsure only large industrial/commercial risks on a facultative basis. Only in Kazakhstan do the surveyed companies report that they are protecting themselves with surplus treaties and CAT XL reinsurance programmes. But even in Kazakhstan, companies readily acknowledged that the amount of reinsurance coverage they placed was likely to be insufficient to protect them against a major catastrophic event.

Local insurers and reinsurers typically do not follow any accumulation control procedures, despite the fact that most of their property premium comes from large cities located in highly-seismic areas of the region. This lack of essential risk management procedures can be explained by the lack of risk management and reinsurance skills in the local markets and by the very limited use of highly-rated foreign reinsurers, which are known for their reporting requirements of catastrophe risk accumulations. Predictably, most of the surveyed insurers did not have any quantitative estimates of their probable maximum loss potentials (for any given return period) as probabilistic commercial catastrophe risk

8 In the insurance industry, this approach is known as a rule of averaging.

models for natural hazards in the region have yet to be created. The situation is somewhat better in Kazakhstan, where more advanced insurers tend to rely on the PML estimates provided by the London market brokers.

Insurance laws and regulations

None of the countries of the region have any specific requirements for pricing, reserving, reinsuring or reporting catastrophe risk underwritten by local insurers. Although currently in all five countries property insurance in general, and catastrophe insurance in particular, are voluntary classes of insurance, Uzbekistan, Kyrgyzstan and Tajikistan are in the process of developing laws on mandatory catastrophe insurance. In the case of Tajikistan, the draft law calls for mandatory insurance of all building structures against all possible perils, including fire and catastrophic risk, at a rather hefty rate of 1 per cent (compared with the 0.3-0.4 per cent estimated technical rate) of sum insured. Although the law will considerably increase the level of catastrophe insurance penetration among residential consumers, it will undoubtedly be perceived by the population as another tax. In the absence of a sensible reinsurance strategy by the Tajiksigurta, the only company allowed to operate in the market, in the case of a major earthquake the Tajik government is likely to be called upon to make good on the company's shortfall to honour all insurance claims.

Product distribution channels

Insurers in Central Asia use mainly their own sales forces, and often tied agents, to distribute their products. Distribution through insurance brokers or independent agents is virtually unknown.

Kazakhstan

Market overview

As of 1 January 2008 there were 44 licensed insurance organizations (8 of them life insurance companies) and 12 insurance brokers operating in Kazakhstan. With total insurance premiums of $890 million and surplus capital of $1,106 million, the Kazakh insurance market has by far surpassed all the rest of the Central Asian markets combined. The real property insurance premium alone was $178.6 million, which is almost twice the amount of total premium in the neighbouring countries. The personal insurance consumption at the beginning of 2009 was $63.3, which among the CIS countries was second only to Russia.

Until recently the market has been growing very fast due to the conducive regulatory environment and the country's rapid economic growth. At the end of 2008, due to the deteriorating economic environment and the considerable financial strains experienced by local companies, the period of market growth came to an abrupt end. It appears that the next few years will be a period of market consolidation through mergers and acquisitions, which is likely to eventually improve the quality of local insurers' balance-sheets.

Nevertheless, the market remains highly profitable. Total volume of insurance claims paid last year was $372.67 million, which is only 41 per cent of the gross premium written.

The Kazakh insurance market also stands out from the rest of the regional markets in terms of the quality of its regulatory oversight and the resultant quality of risk management at the company level. Local insurers have to comply with the European-style insurance regulations on the solvency margin, which is vigorously enforced, as well as with the regulatory requirements to their reinsurance placements[9]. Although there is still considerable room for improvement when it comes to reinsurance placements, in 2008 local insurers paid $402.67 million in reinsurance premium (45.2 per cent of the total written) to improve their overall claims performance, out of which 38.9 per cent went to foreign reinsurers.

9 Government Decree #130 as of 30 April 2008 – Office of Insurance Supervision.

Until recently the influence of foreign insurers in Kazakhstan was limited by the restriction on foreign participation in joint ventures. Since 2007 there has been no such limitation. In mid-2007 it was announced that Allianz Group was set to acquire 100 per cent of ATF Policy, a subsidiary of ATF Bank, and the 10th largest insurance company in Kazakhstan in terms of 2006 gross premium income. Consequently, this became the first fully foreign-owned Kazakh insurance company.

The presence of international brokers in Kazakhstan has done much to internationalize the market, particularly in the field of reinsurance. Due to long-standing connections, the Russian reinsurance market has strong relations with Kazakhstan, and a substantial percentage of business is still reinsured in Russia.

In 2006 the top five companies accounted for 46.8 per cent of the non-life market in terms of gross premium income, and the top 10 commanded 74.2 per cent of gross premium written. The top five companies in terms of gross premium were Eurasia, Almaty International, Kazakhinstrakh, BTA and Alliance Policy.

Review of natural hazards insurance

Country risk profile

Kazakhstan is vulnerable to a number of natural hazards, such as earthquakes, floods, landslides/mudslides/debris flows, avalanches and extreme temperatures. Although Kazakhstan lies in a region with low to very high seismic hazard, earthquakes are the dominant natural hazard faced by the country. The area of the Tien Shan and Altai mountains is characterized by very high seismic hazard (Zone IV-V). It is home to 6 million people (more than one third of the country's population) and more than 40 per cent of the nation's industrial capacity. Earthquake damage in the country is under-reported due to its remoteness and poor damage assessment practices.

Historically, Kazakhstan experiences highly-damaging earthquakes that tend to occur every 80-100 years. The last period of seismic activities was 1885-1911. During that period, several damaging earthquakes occurred at Verneskoye (1887), Chilik (1889) and at Keminskoye (1911). During these earthquakes, the city of Almaty was almost flattened.

The 1911 Kemin (Kebin) earthquake in the northern Tien-Shan (Kazakhstan, Kyrgyzstan) formed a complex system of surface ruptures. Six fault segments of the Kemin-Chilik and the Aksu fault zones with different strikes, dips and kinematics had been activated. Damage occurred in the Chong-Kemin (Bol'shoy Kemin) valley as well as at Anan'yevo and Oytal, Kyrgyzstan. Faulting, fractures and large landslides were observed over 200 kilometres in the Chong-Kemin and Chilik valleys and along the shore of Lake Issyk-Kul. The earthquake was felt more than 1,000 kilometres away in Kazakhstan and Russia. The Kemin earthquake was one of the strongest events of a sequence of seismic catastrophes that affected the Kungei and Zaili-Alatau mountain ranges between 1887 and 1938. Since then there has been no such large damaging earthquake and there are high possibilities of another series of such earthquakes within the next 10-15 years. The more recent, May 2003, earthquake of Zhambyl province killed 3 people and affected 36,626 others. The August 1990 earthquake on the Kazakhstan-China border killed 1 person and affected 20,008 others, with an economic loss of $3 million.

Kazakhstan also has a significant exposure to flood risk. In the plains, spring floods fed by rain and snowmelt occur and in mountainous regions mud flows occur. Mud flows are usually initiated by rainfall or breaches of glacial lakes. However, the largest mud flows are those triggered by earthquakes[10]. Analysis of disaster data shows that the country has suffered from frequent flood disasters. For example, the June 1993 flood in the Embinskyi–Kzylkoginskyi region killed 10 people, affected 30,000 others and caused an economic loss of $36.5 million. The April 2000 flood of the Denisovsky–Zhitikarinsky region affected 2,500 people and caused an economic loss of US$1.5 million. Recently, the March 2005 flood of the Shiyeli–Syr Dariya region affected 25,000 people and caused an economic loss of $7.6 million.

Despite a considerable loss potential from different disasters caused by natural hazards, the country's financial vulnerability to disasters caused by natural hazards is somewhat reduced by the large size of its economy and the

10 Pusch, 2004, World Bank Report.

considerable geographic diversification of its economic base. Nevertheless, economic losses from a severe earthquake (with a return period of 200 years) could be well in excess of $1.13 billion and would deal a hard blow to the country's public finances. A preliminary estimate of economic loss potential from catastrophic events with different return periods is presented in Table 4.

Table 4: Economic loss potential from disasters caused by natural hazards in Kazakhstan

Annual exceedance probability	Economic loss ($ million)	Percentage to GDP (2007)
0.5%	1,136	1.09
5.0%	348	0.34
20.0%	100	0.10

Source: CAC DRMI desk study 2009

Natural hazards insurance

Currently the local insurance market offers coverage for all natural perils (including earthquakes, landslides, floods, wind-storms and hail) as part of all inclusive property coverage for homeowners and enterprises. While homeowners have the right to exclude natural perils from the coverage, in reality very few do so as the ongoing premium rate for comprehensive coverage is only marginally higher than that covering FLEXA perils only. Insurers do not sell stand-alone catastrophe insurance protection.

Due to the relatively low level of insurance awareness, most homeowners' insurance policies in force were bought by home-buyers who took out mortgage loans from affiliated lenders. Most large insurers in the country are owned by local banks.

The current estimated level of insurance penetration for all-inclusive property covers is small. While there are no official statistics on the policy count by classes of business, our estimates indicate that the number of residential policies is around 85,000, which is about 2 per cent of all insurable urban dwellings in the country.

Due the lack of insurance culture and the general mistrust among the population of insurance companies, there are virtually no voluntary buyers of insurance coverage.

The terms and conditions of coverage and pricing are more robust than in any other Central Asian country. For example, the minimum deductible for earthquakes is 5 per cent, and premium rates vary between 0.25-0.41 per cent per sum for all-risks coverage. While the sum insured is set equal to the amount of a mortgage loan taken out by an insured, there are no sub-limits for natural perils and the loss settlement is done on the first-loss basis using the replacement cost approach as long as the policy has been taken out in connection with a mortgage loan. For all other insured, the maximum claim payment is proportionate to the sum insured relative to the replacement cost of the property.

Although in general the premium rates appear to be adequate, there is little price differentiation across different types of residential property risk as the price is set by market forces. Nevertheless, more advanced companies use Munich Re maps of natural hazards and the Benfield model for determining the location-specific surcharges on insured property. More hazard-exposed areas are rated higher.

There is a growing demand on the part of local large insurers for catastrophe excess of loss reinsurance from the international market to cap potential losses from a major catastrophic event in the earthquake-prone parts of the country. Yet, in the absence of credible catastrophe risk models from independent reputable vendors, insurers face difficulties in estimating their potential maximum portfolio losses from catastrophic events with different return periods. In this information vacuum companies appear to err on the 'optimistic' side, buying the bare minimum of

reinsurance protection in order to retain the maximum amount of premium. Our preliminary estimates indicate that the amount of catastrophe excess of loss reinsurance bought by companies will be sufficient only to cover losses from events with a return period well under 100 years (compared to the international standard of 250 years).

None of the interviewed companies, except foreign-owned, actively managed its risk accumulations or even had any estimates of its loss potentials (for example, PML estimates for different return periods) from its portfolio of property business. In that sense, although the market regulation is the most advanced in the region, the excessive catastrophe risk exposure of local companies is yet to be addressed by the Insurance Supervisor.

The survey allows us to draw the following conclusions about the Kazakh market:

1. The level of catastrophe insurance penetration in Kazakhstan is too low to mitigate the adverse financial consequences of future disasters caused by natural hazards on the economy, central government and household budgets.

2. The nascent level of risk management in the local insurance industry is likely to impair the ability of insurers to pay claims in full in the case of major catastrophe events, although the expected indemnity payouts per each dollar of sum insured are likely to be well over 50 per cent.

3. Despite the above-mentioned drawbacks, the Kazakh insurance market is clearly the most advanced in the region and hence can be used as a launching pad for a regional catastrophe insurance programme.

Kyrgyzstan

Insurance market overview

In 2007 Kyrgyz original gross market premium volumes, all classes direct, were KGS 187.6 million ($5.03 million), which makes it the smallest and least developed of the Central Asian insurance markets. In 2007 per capita insurance spending in Kyrgyzstan was under $1, compared to $2 in neighbouring Uzbekistan and $200 in Russia. However, total gross premiums grew in 2007 to KGS 196.5 million ($5.27 million), out of which non-life insurance premium was $4.1 million. This represented a nominal growth of about 30 per cent, or 25 per cent per cent in real terms. In 2008 there were 18 registered insurance companies operating in the market with an overall capitalization of $8 million. There is foreign participation in seven local companies.

Although property insurance accounts for over 60 per cent of total gross premium written, very few houses are insured. According to the local insurance regulator, in 2008 there were only 10,672 individual property insurance policies, all with catastrophe insurance coverage. This is well under 1 per cent of the total housing stock.

Such a low level of insurance penetration is mainly due to the low income of the population, a general lack of insurance awareness, and because insurance companies are widely regarded with suspicion (often rightly so because of their poor claims payment track record).

International companies, embassies and aid operations are the only organizations which routinely insure in the market, and there is little sign of insurance penetration among the local community. As shown in Table 5 Kyrgyzstan has the lowest per capita spending on non-life insurance as a percentage of GDP, and in absolute dollar terms, among all the countries of the region. One of the main reasons behind such a low level of insurance consumption, besides the low incomes of the population, is the fact that Kyrgyzstan is among the few remaining countries in the world which does not have a mandatory Motor Third Party Liability (MTPL) insurance coverage.

Table 5: Insurance premium consumption in Central Asia and Russia

	GDP (%)	per capita ($)
Kazakhstan	1.06	55.63
Kyrgyzstan	0.11	0.78
Russia	1.10	99.28
Tajikistan	0.77	4.24
Turkmenistan	0.23	6.04
Uzbekistan	0.32	2.14

Source: AXCO reports, author's estimates

As the market does not have a formal solvency margin requirement there is a strong competition on rates, which are rather low by international standards. The market nevertheless appears to be profitable. The majority of insurance business transacted still relates to the requirements of international companies which operate in Kyrgyzstan and to embassies and aid organizations.

The market suffers from the lack of professional insurance expertise, particularly in the area of actuarial and underwriting skills. The lack of appropriate information technology (IT) is also a problem. Most companies have standard accounting packages, but few have sophisticated underwriting programmes. At the most basic level, tying up a reported claim to its original policy can sometimes be a challenge, requiring a search through wads of paper before the policy is located. Having identified the policy there is no guarantee that the claim will be put back to its appropriate underwriting year.

Kyrgyzinstrakh, the largest company in the market with a 30 per cent market share, has paid-up capital of KGS 10 million ($275,482) and has reserves of a further KGS 4 million ($110,193). The company is now a subsidiary of the Ingosstrakh Group of Russia and writes the aviation account in Kyrgyzstan, together with a property and liability account. This company should not be confused with Rosstrakh-Kyrgyzstan, which is a subsidiary of Rosstrakh. Nor should it be confused with Kyrgyzstan Insurance, which was previously the Kyrgyz Gosstrakh.

Review of natural hazards insurance

Country risk profile

Kyrgyzstan is vulnerable to a number of disasters due to natural hazards, including earthquakes, landslides, avalanches and floods.

With an average economic loss (AAL) of $8 million, earthquakes are the dominant risk in Kyrgyzstan, followed by landslides ($2.6 million). As shown in Table 6, the 20-year return period loss for all hazards is $49 million (1.4 per cent of GDP), while the 200-year return period loss is $160 million (4.57 per cent of GDP). The main seismic risk area is the Fergana Valley, which runs into neighbouring Uzbekistan.

Table 6: Economic loss potential from disasters caused by natural hazards in Kyrgyzstan

Annual exceedance probability	Economic loss ($ million)	Percentage to GDP (2007)
0.5%	160	4.57
5.0%	49	1.40
20.0%	15	0.42

Source: RMSI, 2009

Hundreds of small- and mid-size earthquakes occur in the country every year. Almaty, the commercial capital of neighbouring Kazakhstan and which is in the same risk zone as Bishkek, has twice been destroyed by earthquakes in the last 100 years. A magnitude 7.3 earthquake on 19 August 1992 in the Dshalal-Abad region killed 54 people, affected 86,800 others and incurred a reported economic loss of $130 million. Earlier, on 15 May 1992, a magnitude 6.6 earthquake in the Burgandi-Nookat region killed 4 people, affected 50,000 others and caused an economic loss of $31 million. A magnitude 7.0 earthquake on 9 January 1997 in the Ak-Tala district affected 1,230 people and caused an economic loss of $2 million. A magnitude 5.8 earthquake on 26 December 2006 in the Isakeevo-Kochkorka region affected 12,050 people. Recently, on 5 October 2008, a powerful earthquake of magnitude 6.6 hit the south-east of Kyrgyzstan, 220 kilometres from the main city of Osh near the borders of Tajikistan and the People's Republic of China. The two districts (rayons) of Alai and Chonalai were affected. The village of Nura was the most severely damaged, with 74 people (including 43 children) killed, and 157 people injured. An estimated 90 per cent of the village infrastructure was destroyed and more than 850 people were left homeless. The estimated damage caused by the earthquake in the area covered in the assessment was in the range of $20 million.

Natural hazards insurance

Currently, the market offers coverage for all natural perils (including earthquakes, floods and wind) as part of all-inclusive property coverage for homeowners and enterprises.

The estimated level of insurance penetration for all-inclusive residential property covers is very small – around 10,000 policies country-wide, which is less than 1 per cent of all insurable urban dwellings in the country. Most insurance policies have been taken out by mortgage borrowers at the request of banks affiliated with insurers. However, over the last few months, due to the precipitous declines in property values and the ongoing deleveraging of the banks' balance-sheets, mortgage lending came to a halt, thus putting on hold insurers' efforts to gain new business.

Due the lack of insurance culture and the general mistrust of the population of insurance companies, there are virtually no voluntary buyers of insurance coverage.

The terms of coverage and pricing are highly favourable to the insured – deductibles rarely exceed 2 per cent, but in most cases tend to be zero, while premium rates hover at the level of 1 per thousand of sum insured for all-inclusive property coverage or below. There are no sub-limits for natural perils and the loss settlement is done on the basis of replacement value.

Insurance companies have a genuine lack of risk management skills and lack appreciation of the enormous loss potential inherent in writing the all-inclusive property covers in earthquake-prone areas. Despite a rather small capital base (the current statutory minimum capital requirement for insurers is less than $0.5 million), there are no additional solvency margin requirements. Except in the case of large industrial or commercial risks, insurers generally do not buy excess of loss reinsurance to protect their risk retentions, and some do not buy any reinsurance at all unless specifically requested by their large commercial clients.

Insurance companies generally do not manage their risk accumulations and have no estimates of their real risk exposure, such as probable maximum loss (for any given return period) for their portfolios of property business in disaster-prone areas.

While the pricing of insurance risk is highly favourable to homeowners, it is clearly not adequate to cover the costs of providing coverage for all property perils in the long-run. The premium rates in general, and property insurance in particular, are driven by market competition only and are not sufficient to cover the cost of risk. For example, in neighbouring Kazakhstan the premium rate for an all-inclusive property cover is offered at the rate of 3-4 per thousand, while in San-Francisco, the city with roughly the same level of seismicity, the rate could be even higher – varying between 4-6 per thousand. In Turkey, the premium rate just for earthquake coverage (without including FLEXA perils) in Istanbul is about 3 per thousand of sum insured. As a result of this risk under-pricing, local insurers cannot

afford reinsurance, which leaves them highly exposed to the risk of earthquakes and insolvency in case of a major catastrophic event as they will be unable to honour the claims of their clients.

The typical sum insured amounts to either 120 per cent of the loan value or the real value of the property, whichever is higher. Local insurers tend to shy away from insuring mud-made structures, which are highly vulnerable to both earthquakes and floods.

There was an attempt last year by the Government to introduce a compulsory disaster insurance law, but the law was rejected by the Parliament for being at odds with the country's constitution.

Tajikistan

Insurance market overview

With total gross premiums of $28.56 million in 2007, Tajikistan is one the smallest of the Central Asian CIS insurance markets. Only neighbouring Kyrgyzstan, which saw premiums significantly decline in 2005 after a revolution and change of government, is a smaller market in premium income terms. However, the market has been growing rapidly over the last five years. In 2004, for instance, total gross premiums were only $4.9 million, while in 2007 the market growth rate was about 27 per cent. This growth rate is particularly impressive given the fact that the country's GNP is among the lowest in the region and that most of the insurance premium written in the market (81.7 per cent) comes from voluntary business lines. In 2007, voluntary property insurance premium accounted for 77.2 per cent of the total.

The overall composition of insurance premium in the country in 2007 is shown in Table 7.

Table 7: Overall insurance premium composition in 2007

Class	Premium	Market share	
	TJS million	USD million	%
Life	3.3	0.95	3.4
Personal	3.0	0.87	3.1
Liabilities	0.9	0.26	0.9
Property	73.3	21.30	74.5
Compulsory	17.8	5.17	18.1
Total	98.3	28.56	100.0

The market presently consists of 15 companies, of which two are State-owned and 13 are privately-owned. Of the 13 privately-owned insurance companies, only one has foreign participation in equity. Of the total 15 companies licensed in 2007, only 13 appear to have been active. In international terms, all companies are small and few are capitalized beyond the basic regulatory minimum requirement of TJS 100,000 ($29,240). In fact it is quite likely that, given the nascent stage of insurance regulations, some companies are not in compliance even with this very low threshold. It appears that the market is profitable, with paid loss ratios generally not exceeding about 10 per cent.

Locally-incorporated insurers are allowed to underwrite both general and life business within the same company and this is unlikely to change for the foreseeable future. Of the 15 registered companies in 2007, six were essentially composite, writing both life and non-life lines in the same company.

The insurance market is dominated by the larger of the two State companies, Tajik Sugurta, which is the successor to Tajik Gosstrakh, and a more recently-formed private insurer, Orien Insurance. Together with the other State company, Tajik Sarmoya, Tajik Sugurta enjoys a legal monopoly (duopoly) of all the compulsory insurances, but the position of the former market leader Tajik Sugurta has been eclipsed by Orien, which had a market share in 2007 of over 67 per cent. The draft new insurance law presented to Parliament in 2008 includes a provision for both privatisation of State companies and a reduction in the number of compulsory classes.

There are no brokers operating in Tajikistan and distribution of insurance products is therefore conducted either on a direct basis by company employees or through agents who are paid a commission for producing business. Given the size of the local market, it seems unlikely that any brokers will be established in the foreseeable future. The two State companies have branches throughout the country. Tajik Sugurta has 70 branch offices and 560 agents. The private insurers obtain almost all their business on a direct basis.

Review of natural hazards insurance

Country risk profile

In Central Asia the earthquake hazard is similar to that of California. As a grim reminder of this risk, Dushanbe, the country's capital and largest city, was last seriously damaged by a magnitude 7.4 earthquake in 1907. It is estimated that if a similar size earthquake were to occur today, it would result in 55,000 fatalities and over a $1 billion economic loss. Almaty, the capital of Kazakhstan, which is in the same risk zone as Dushanbe, has twice been destroyed by earthquakes in the last 100 years; and Tashkent, the capital of Uzbekistan, which is also in the same risk zone, was completely destroyed in an earthquake in 1966. There was a further severe earthquake in Tajikistan in 1911. In an average year there are upwards of 4,000 tremors.

During the 1911 earthquake the side of a mountain fell into a valley creating Lake Sarez, which now contains 16 cubic kilometres of water. This natural dam sits 3,300 metres up in the Pamir Mountains above the homes of five million people and threatens to come crashing down in the event of another serious earthquake. With a return cycle of 80 to 120 years, a serious earthquake is expected now at any time.

Because design and construction practices were centralized in the former Soviet Union, four-fifths of all pre-cast concrete residential buildings constructed between 1960 and 1990 can be placed into one of only six structural types. Only one of these types is considered satisfactory due to its seismic-resistant design and its relative insensitivity to construction quality.

While the earthquake building code from the Soviet period is considered to be generally adequate by experts, the problem is mainly in the weak enforcement which resulted in the poor quality of construction. Since independence, there has been some improvement in construction quality, but generally only where international enterprises are concerned.

A preliminary estimate of economic loss potential from catastrophic events with different return periods is presented in Table 8.

Figure 1: Earthquake risk profile of Central Asia

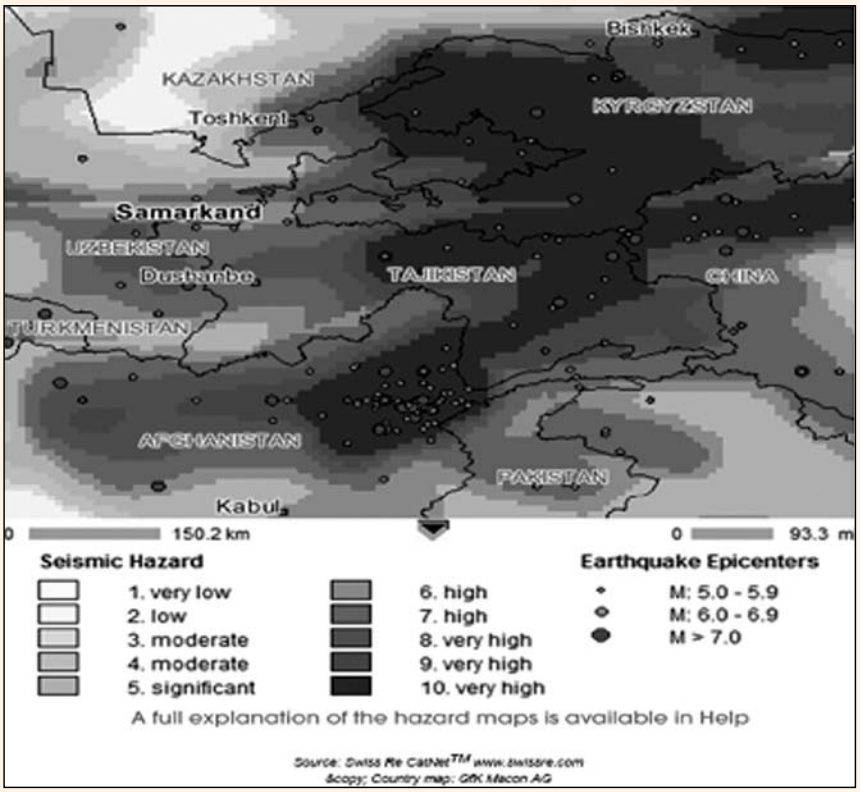


Table 8: Economic loss potential from disasters caused by natural hazards in Tajikistan

Annual exceedance probability	Economic loss ($ million)	Percentage to GDP (2007)
0.5%	776	20.92
5.0%	355	9.56
20.0%	139	3.75

Source: CAC DRMI desk study 2009

Natural hazards insurance

Currently, the local insurance market offers an all-risk inclusive property insurance policy, which besides traditional FLEXA perils also provides coverage against almost all known types of disasters caused by natural hazards. While in theory homeowners can exclude natural perils from their coverage, in practice there are no stand-alone catastrophe insurance policies in the market today.

The scope of coverage under the homeowners' policies includes damage to structures and internal fixtures as well as house contents.

Despite the fact that the local property insurance market has been growing fast over the last few years, currently there are less than 12,000 individual homeowners' policies in-force, which is well under 1 per cent of the existing housing stock.

Most property policies are typically issued as the first-loss policies with a small deductible of about 2 per cent. The sum insured for natural hazards is the same as for other perils and is typically established at the time of policy issuance. In the case of loss, claims are settled by insurance companies' own loss adjustors.

While the premium rates are set by the market rather than by actuaries (which are virtually non-existent), the market appears to charge slightly higher rates in more seismically-prone areas of the country. The average premium rates charged by the market (well under 1 per mille) appear to be well below the combined technical price of FLEXA risk and natural hazards. This mispricing of risk also suggests that most local insurers do not collect enough premiums to buy reinsurance protection from reputable reinsurers.

Virtually all policies are sold through companies' own sales force.

As most policies are sold in Dushanbe, which besides being the country's most affluent city is also an area of high seismic hazard, companies have considerable risk accumulations. Yet none of the surveyed insurance companies monitored its earthquake risk accumulations or bought reinsurance for these catastrophic risk exposures. The companies reported 100 per cent risk retention of all risk written for their residential property portfolios. With an average value of local dwellings estimated at about $30,000, the overall market risk exposure to earthquake risk amounts to $3.6 billion. By applying the estimated California PML (for a 100-year earthquake) of 10 per cent to this risk exposure, we arrive at the potential loss of about $360 million – an amount which by more than one hundred times exceeds the capitalization of the local insurance market. This schematic calculation clearly illustrates the risk management challenges faced by the Tajik market.

Recently, the Government prepared a draft law on the mandatory insurance of all dwellings in the country against the risk of fire and natural hazards. The premium rate for this all-risk cover is proposed to be set at 1 per cent of property value, which is very high by any international standard and particularly in a country with the income levels of Tajikistan. It also needs pointing out that while mandatory insurance against natural perils is quite common world-wide, not a single country in the world has a mandatory property insurance requirement. Among the other most striking features of the law is that insurers are not obligated to pay claims in case of an insured loss, whereas homeowners are obligated to pay the premium.

Turkmenistan

Insurance market overview

After the collapse of the Soviet Union in 1991, the insurance market was partially opened to competition and both State and private companies were operating. For a short time Turkmen Gosstrakh was partially privatized, but in 1997 was taken back into full State ownership. Throughout the 1990s Turkmen Gosstrakh was still the major insurer, writing some 70 per cent of all premiums. This company had a monopoly of all State business and wrote the majority of compulsory classes as well as some other business. In 2000, the Government cancelled the licences of all the private insurers operating in the market, and effectively renationalized the insurance industry in Turkmenistan. The only insurer now operating is Turkmen Gosstrakh. This resulted in the closure of the sector of the market which was most effective in persuading people to insure and which was responsible for the development of Western-style insurance

products. Market penetration declined immediately after renationalization since Turkmen Gosstrakh does not have the entrepreneurial spirit that the private insurers had.

In 2008 the gross premium written in the country was $30 million, which makes it among the smallest markets in Central Asia. The concept of private insurance is by-and-large unknown to the majority of the population, as evidenced by the fact that almost all personal property remains uninsured and there is very little personal insurance. Most people view insurance with suspicion and, because of low income, lack the ability to pay premiums.

Review of natural hazards insurance

Country risk profile

In 1948 Ashgabat, the capital city, was completely destroyed by an earthquake that was estimated at between 9 and 10 on the Richter scale. The whole city was affected: buildings collapsed and roads and utilities were completely destroyed. Many thousands of people were killed. Since then, the city has been completely rebuilt from the rubble. There are no details of the economic loss, since no buildings were insured. In today's terms, the loss would have amounted to billions of dollars. The Kopetdag mountain range, which runs along the border with Iran in the south of the country, is known to be prone to seismic movement, and another serious earthquake could occur at any time.

When Ashgabat was rebuilt after the 1948 earthquake, the buildings were reputed to be constructed to earthquake-resistant standards, but it is not known if the standards applied would be capable of resisting a similar occurrence to the 1948 event.

Because design and construction practices were centralized in the former Soviet Union, four-fifths of all modern pre-cast concrete residential buildings can be placed into one of only six structural types. Only one of these types is considered satisfactory due to its seismic-resistant design and its relative insensitivity to construction quality. It has been estimated that in the case of a major earthquake in Turkmenistan, three types of construction are liable to partial or total collapse, two types to moderate-to-heavy damage and only one type of construction to slight-to-moderate damage. Similarly, it is possible to estimate that the fatality rate will be 0.5 per cent for a MSK VIII earthquake and 2 per cent for serious injuries. In an MSK IX earthquake, 100,000 serious injuries and 25,000 deaths could be expected in Ashgabat, a city of 500,000 people, this affecting approximately 20 per cent of the total population of the capital.

The two seismic institutes in Ashgabat have been closed since the end of the Soviet Union, and unfortunately there is very little information on return periods available. The 1996 GeoHazards seminar held in Kazakhstan estimated that there was a 40 per cent chance of a serious earthquake (MSK IX intensity) occurring near or in one of the Central Asian major cities in the next 20 years.

A preliminary estimate of economic loss potential from catastrophic events with different return periods is presented in Table 9.

Table 9: Economic loss potential from disasters caused by natural hazards in Turkmenistan

Annual exceedance probability	Economic loss ($ million)	Percentage to GDP (2007)
0.5%	1,564	12.10
5.0%	433	3.35
20.0%	115	0.89

Source: CAC DRMI desk study 2009

Natural hazards insurance

Similar to other Central Asian markets, Turkmen Gosstrakh offers an all-risk homeowners' policy, which besides FLEXA perils covers natural hazards as well. It is company policy not to cover poorly-built structures. The all-risk insurance policy covers damage to dwellings and their contents. The policy provides for the same insured limit for both FLEXA and natural hazards coverage. The deductibles appear to be very insignificant, and are close to zero.

The Turkmen market differs from most of the neighbouring countries in one important aspect though: it appears that due to its monopoly power the Turkmen Gosstrakh is able to charge realistic premium rates on its residential insurance products, for example 0.3-0.4 per cent.

The insurance policy sold by Turkmen Gosstrakh is a first-loss loss-type product, with the indicated sum insured in the policy being the maximum amount of indemnification payable.

The company sells its products through its sales force, tied agents and State-owned banks.

Turkmen Gosstrakh underwrites without reinsurance protection for all personal lines, smaller risks and compulsory classes, relying on its capital of $15 million to pay any claims that may arise. Large risks, including the aviation business, are placed through large international reinsurance brokers predominantly with large European reinsurers such as Munich Re and Swiss Re. No domestic brokers are allowed by the local insurance regulations.

Similar to most insurers in the region, the company does not monitor its catastrophe risk accumulations and has no actuarial skills to price catastrophe risk properly. Despite the relatively high premiums charged by Turkmen Gosstrakh and relatively low level of property insurance penetration (about 1 per cent of dwellings), the company is likely to struggle with the payment of claims in the event of a major earthquake.

Uzbekistan

Insurance market overview

In 2007 the gross total market premiums written in Uzbekistan were UZS 72.3 billion ($57.3 million) compared with UZS 48.7 billion ($40.7 million) in 2006. Although this makes it the second largest in the region after Kazakhstan, the insurance consumption per capita is extremely small – about $2, which points to the nascence of the Uzbek market. However, the market has been growing quickly, outpacing the nominal GDP growth by at least 100 per cent, with the majority of business being the insurance of large property and liability risks, compulsory insurance of motor vehicles and the insurance of transit risks – particularly of oil exports. There is very little personal insurance. The majority of the population does not have the available income to insure its property. Private sector and joint venture insurers target the insurance needs of foreign investors, or rely on business channelled to them by their owners. If the oil and gas industry develops there could be an increased demand for insurance, both for the facilities and pipelines and the commodities.

There are 27 registered insurers in the market, of which 25 are non-life companies. The market for personal insurances and life and savings products is very small, and there is unlikely to be a development of broadly-based financial service groups for some considerable time until the living standards of the population have improved.

Although the monopoly of State companies has ceased to exist in theory, in practice the four State-owned companies still receive the majority of Government business, which is directed to them. With a market share of 23.7 per cent in 2007, Uzbekinvest was the largest of the four State-owned insurers in premium-income terms. It was established in accordance with an April 1994 decree, which had the objective of insuring investments in property in Uzbekistan by

foreign parties, the interests of Uzbekistan investors abroad and exporters. Uzagrosugurta is the second largest insurer in Uzbekistan. In 2007 the company had a share of approximately 19.4 per cent of the total market, compared with 18.2 per cent in 2006. The company has around 10 million policyholders. They are predominantly in rural areas because of the compulsory classes of agricultural insurance (for example crop, livestock and rural structures) it underwrites. However, most of this insurance coverage is heavily subsidized by the Government and can be considered as a latent form of Government assistance to agriculture rather than genuine insurance. In 2006 the four State-owned insurers controlled almost 49 per cent of market share.

The market's further development is hindered by the relatively low level of foreign investment and the depressed incomes of the majority of the population. In addition there appears to be a genuine lack of a risk management culture among local businesses and individuals, with insurance being bought only if required by lenders. But even in such a case the key consideration in choosing the insurance carrier is the price of coverage rather than its claims payment record, capital base or quality of its reinsurance protection. As a result local insurers which refuse to compete on price, but rather on the credit quality of their coverage and services, are bound to insure only companies with foreign participation or foreign property interests.

The cut-throat competition on price among local insurers results in the unhealthy situation where local companies do not collect enough premium to buy adequate reinsurance protection and hence end up retaining most of the risk themselves. In a country as seismically-prone as Uzbekistan, such an approach to risk management is a sure path to insolvency.

In cases when reinsurance is bought it is usually for large commercial and industrial risks on a facultative basis. There is virtually no business written on an excess of loss basis, and catastrophe covers are not generally purchased.

Most insurance sales in Uzbekistan are primarily completed by company employees, with the exception of the extensive agency network of Uzagrosugurta. A number of other insurers such as Uzbekinvest have branches or subsidiaries in the regions. For a number of compulsory lines, especially in life/personal accident, the appropriate ministry pays the premium centrally. Passenger personal accident premium is collected as a supplement to the ticket price on all forms of public transport, and supplementary passenger personal accident is sold from ticket booths. Insurance brokers do not play any significant role in the market.

Review of natural hazards insurance

Country risk profile

Uzbekistan is prone to number of rapid-onset natural hazards, such as earthquakes, floods and landslides. However, with an economic average annual loss of $89 million, the earthquake hazard is the most dominant in Uzbekistan. The 1966 Tashkent earthquake left over 100,000 people homeless by destroying a good part of the city. The reported economic loss from the earthquake was $300 million, which, if adjusted for inflation in dollar terms, in 2008 terms would be equivalent to about $2 billion. However, an earthquake of similar magnitude to that of the 1966 event today would be likely to cause a significantly larger loss due to the considerable increase in the value of assets at risk in the city.

The magnitude 7.0 earthquake of Gazli on 17 May 1976 caused an economic loss of $85 million. On 19 March 1984 a magnitude 7.0 earthquake in the Gazli–Bokhara region affected 201,100 people and caused an economic loss of $5 million. In May 1992 an earthquake of magnitude 6.2 killed 9 people and affected 50,000 others in the Andizhan region.

The preliminary estimates of economic loss potential in Uzbekistan from large disasters caused by natural hazards (derived from the loss data for the last 20 years) are presented in Table 10.

Table 10: Economic loss potential from disasters caused by natural hazards in Uzbekistan

Annual exceedance probability	Economic loss ($ million)	Percentage to GDP (2007)
0.5%	2,128	9.5
5.0%	623	2.8
20.0%	177	0.8

Source: CAC DRMI desk study 2009

As can be seen from Table 10, an economic loss from a 20-year event (in other words with a probability of 5 per cent) is estimated at $623 million (2.8 per cent of GDP), while the 200-year return period loss is $2.13 billion (9.5 per cent of GDP).

Floods and mud flow hazards are significant in the country. A few are caused by snowmelt run-off or severe storms; very large floods and mudslides are generally caused by the outbreak of mountain lakes. Uzbekistan also has a trans-boundary hazard from hundreds of lakes in Kyrgyzstan and Tajikistan, upstream of Uzbekistan in the Aral Sea basin. In 1998 a breakthrough on the Shakhimardan river, originating in Kyrgyzstan, killed 100 Uzbeks and caused damage estimated at $700 million. Lake Sarez, in Tajikistan, also poses a flood hazard to Uzbekistan and Tajikistan. The flood of February 2005 in the Boymurod region affected 1,500 people.

Natural hazards insurance

Currently, the market offers coverage for all natural perils (including earthquakes, floods and wind) as part of all-inclusive property coverage for homeowners and enterprises.

The estimated level of insurance penetration for all-inclusive property covers is very small, totalling around 60,000 homeowners' policies country-wide in urban areas, or about 1 per cent of all insurable urban dwellings in the country. Although Uzagrosugurta reported about 700,000 property policies in its portfolio, most of these were issued to cover auxiliary structures (such as greenhouses, warehouses and cattle farms, etc.). The sums insured in the case of agro property covers were based on the cadastre values, which are only a small fraction of the true replacement cost or market value of these properties.

Despite the fact that the terms of coverage and pricing are highly favourable to the insured – deductibles rarely exceed 2 per cent, but in most cases tend to be zero, while premium rates hover at the level of 0.5-1.0 per thousand of sum insured or below – there are virtually no voluntary buyers of insurance coverage. This situation can be explained mainly by the lack of insurance culture, the low incomes of the population and the general mistrust of insurance companies. As a result, most insurance policies have been taken out by mortgage borrowers at the request of commercial lenders.

There are no sub-limits for natural perils and the loss settlement is done on the basis of replacement value – up to 100 per cent of property replacement cost in the case of full non-life insurance (less a deductible) and proportionally in case of underinsurance.

Insurance companies have a genuine lack of risk management skills and a lack of appreciation for the enormous loss potential inherent in writing the all-inclusive property covers in earthquake-prone areas. Despite a rather small capital base (the current statutory minimum capital requirement for insurers is $1 million), the vast majority of companies do not buy excess of loss reinsurance to protect their risk retentions, and some do not buy any reinsurance at all. Most companies do not actively manage their risk accumulations or even have any estimates of their potential liabilities in case of a severe catastrophic event for the existing portfolio of property business.

While the pricing of insurance risk is highly favourable to homeowners, it is clearly not adequate to cover the costs of providing coverage for all property perils in the long-run. The bundling of FLEXA insurance cover with a cover for catastrophic perils into an all-inclusive policy has created fertile ground for mispricing the risk of catastrophic perils by insurers as the competition drives the rates for earthquake coverage to zero. As a result of this risk under-pricing local insurers cannot afford reinsurance, which leaves them highly exposed to the risk of earthquakes and most likely insolvency in case of a major catastrophic event as they will be unable to honour the claims of their clients. The problem is further amplified by the general reluctance of companies' shareholders to spend money on reinsurance and the lack of regulatory capacity to monitor the companies' true risk-based solvency margin.

To summarize, the level of catastrophe insurance penetration in Uzbekistan is too low to mitigate the adverse financial consequences of future disasters caused by natural hazards on the economy, central Government and household budgets.

In the case of major catastrophic events, the lack of adequate risk management and risk underwriting skills in the local insurance industry is likely to manifest itself in the inability of local insurers to pay claims – even those of the few homeowners who actually bought insurance.

Conclusions

1. Central Asian insurance markets are not homogenous in terms of their development.

The review of regional insurance markets reveals that, although the countries of Central Asia started their post-Soviet economic transition roughly on an equal footing, over time the Kazakh insurance market has become a clear leader both in terms of size and the level of its technical sophistication. In 2008 the gross insurance premium and the total surplus capital of the Kazakh market were many times that of all its neighbours combined. The vigorous enforcement by the Kazakh regulatory authorities of solvency and minimum capital requirements in the marketplace enables healthy market competition characterized by adequate risk pricing and sufficient capitalization of local insurers. Hence, our first main conclusion is that in terms of their overall development the markets of the region can be clustered into two distinct groups: Kazakhstan, and the rest of Central Asian markets. Hence, any policy approaches to further market development must differentiate between these two groups of countries.

2. All Central Asian insurers have made very little progress in developing personal insurance lines – including property insurance with catastrophe endorsement.

Although the level of development of different markets in the region varies considerably from country to country, the level of personal property insurance coverage (inclusive of natural hazards cover) remains universally low in all five countries. The overall number of households covered against the FLEXA risks and natural hazards does not exceed 2 per cent in any given market. Among the key reasons behind such a low level of insurance penetration for property and natural hazards coverage are the lack of general insurance awareness, low disposable incomes of the population (with Kazakhstan being a relative exception), and the lack of confidence among the population in the ability of local insurers to pay claims in the event of a major catastrophic event.

3. Central Asian insurers suffer from the acute lack of risk management skills, which may jeopardize their ability to pay claims in the case of a large catastrophic event.

The survey revealed that most insurance companies do not have the necessary underwriting, actuarial or reinsurance skills to provide coverage against natural hazards. The majority of companies do not buy any reinsurance protection for their risk accumulations, while those which do buy reinsurance end up placing their covers with non-rated carriers[11] in

11 Non-rated insurers are defined as those which do not have investment grade ratings from either of four internationally recognized rating companies such as S&P, Moody's, Fitch or A.M. Best.

Russia and Ukraine, which are ready to accept the risk at a very low rate. Most reinsurance coverage is bought on the quota-share basis. Very few companies buy any excess of loss coverage and only two companies acquired catastrophe excess of loss protection. Only foreign-owned companies monitor their catastrophe risk accumulations and use modelled estimates of risk to determine their probable maximum loss from catastrophic events with different return periods.

4. In all Central Asian markets, except Kazakhstan, the premium rates charged by insurers for providing all-risk property coverage appear to be grossly inadequate to cover the costs of risk.

The lack of effective insurance supervision along with the cut-throat competition for new business has resulted in very low premium rates for all-risk property coverage charged by Central Asian insurers. Although on the surface this may appear to be good news for consumers, in reality inadequate premium rates mean that companies cannot afford to place reinsurance cover with credible reinsurance companies and hence have to retain most, if not all, of the risk themselves. This endangers their ability to pay claims in the case of a catastrophic event.

5. Low disposable incomes and the lack of trust among the general population in insurance companies hinder the development of the personal insurance lines market in the region.

The poor claims payment record of many local insurers in combination with the lingering memories of Soviet insurance organizations such as Gosstrakh and Ingostrakh (which were perceived as types of Government tax agents in the guise of insurers) present a major obstacle to the expansion of the private lines market.

6. Hazard risk models for key natural perils are yet to be developed. In the absence of credible catastrophe risk models, local insurers' ability to manage their catastrophe risk is severely handicapped.

Most insurers in the market do not have any reliable quantitative estimates of their peak risk exposures (PML for given return periods), which makes them financially vulnerable to large catastrophic events.

Recommendations

1. The insurance sector in all five countries will benefit from the development of a regional catastrophe risk model for key natural perils (primarily earthquakes) by an internationally-recognized world-class independent risk modeller. The results of this work will go a long a way to address the problem of catastrophe risk under-pricing and improving the quality of reinsurance programmes purchased by local insurance companies.

2. The insurance regulatory authorities in all countries should encourage companies to provide regular information about their risk accumulations [in terms of sums insured and 200-year probable maximum loss (PML) estimates] by Cresta zone. The latter could be based on the quantitative model-driven estimates of insurers' risk accepted by the insurance regulator. In the absence of the country-specific hazard model, the insurance regulators may use a proxy estimate borrowed from a foreign location with a similar level of seismicity (such as Bucharest or Mexico City).

3. Country insurance regulators should carry out a comprehensive review of companies' reinsurance practices to ensure the sufficient credit quality and quantity of reinsurance protection bought from the international, and frequently local, reinsurance market.

4. The regional insurance market and all five countries would benefit from the creation of a regional catastrophe insurance pool, which could rapidly boost demand for stand-alone catastrophe insurance coverage in each country of the region through the introduction of a mandatory insurance cover for all urban dwellings. Besides securing access for local homeowners to affordably-priced and reliable coverage, the regional pooling mechanism

would also help to reduce the financial exposure of local insurers and governments to catastrophic risk. Given the advanced level of the Kazakh insurance market in the region, Almaty would appear to be the most suitable location for such a regional insurance facility.

III Survey of Government Post-Disaster Safety Nets in Central Asia

Background

During the last century, governments in all the countries of Central Asia traditionally played the role of main financier of the cost of disasters caused by natural hazards. The situation did not change after the collapse of the Soviet Union and the emergence of five independent Central Asian states, and today, given the nascent state of the local insurance markets, governments in all countries of the region remain the only providers of post-disaster safety nets.

However, to date there has been no clear and systematically-collected information on the effectiveness and size of these government safety nets. Hence, the main objective of this work was to describe the level and effectiveness of government financial assistance to households and small and medium enterprises in the aftermath of disasters caused by natural hazards. Such government assistance to victims of disasters caused by natural hazards typically comes in the form of post-disaster subsidies for income support and reconstruction of personal dwellings, subsidized reconstruction loans as well as material in-kind emergency assistance from the government emergency 'material' reserves.

Overview

From the outset, it must be pointed out that in general the information received from the written surveys and country missions has been rather scarce, varying greatly from one country to another[12]. Nevertheless, despite the general shortage of fiscal data, the overall picture that emerges from our field research is clear: the fiscal resources allocated for national emergencies by governments in all five countries are grossly insufficient to meet the costs of even small disasters caused by natural hazards.

National post-disaster funding mechanisms

Emergency budgetary allocations. As shown in Table 11, four out of five surveyed countries (Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) budget annually for emergencies, including disasters caused by natural hazards, by allocating a percentage of budgetary revenues to a national Emergency Fund. Budgetary resources from this fund can be used to finance disaster mitigation every year. However, even in those countries which regularly make budgetary provisions for emergencies, the annual allocations are well under 1-2 per cent of total national budgets.

In Kazakhstan and Uzbekistan central government budgetary allocations for emergencies are supplemented by emergency allocations in the budgets of local and regional authorities. However, given the highly-centralized inter-governmental fiscal systems in the countries of Central Asia, provincial and local authorities typically do not fully fund these emergency allocation items in the expectation of emergency assistance from the central budget. Hence, the central government budget remains the main and practically the only source of post-disaster funding. The annual central budgetary allocations could also be supplemented by funding from emergency budgets of government ministries and agencies, but these budgets are typically very small.

All countries have established and maintain 'material emergency reserves', which contain food and medical supplies. These provisions are dispensed in cases of national emergencies to victims of disasters.

12 The information presented in this chapter was collected through written questionnaires addressed to responsible government officials as well as through personal interviews carried out by the author of this report during the World Bank and UNISDR joint mission in January 2009 in all five countries of the region. Inputs were provided by the following countries: Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.

Due to the limited national budget funding for emergencies, in most cases of emergency countries have to increase their original budgetary allocations to a disaster fund by passing special emergency legislation.

Table 11: Sources of government funding for emergencies in Central Asia

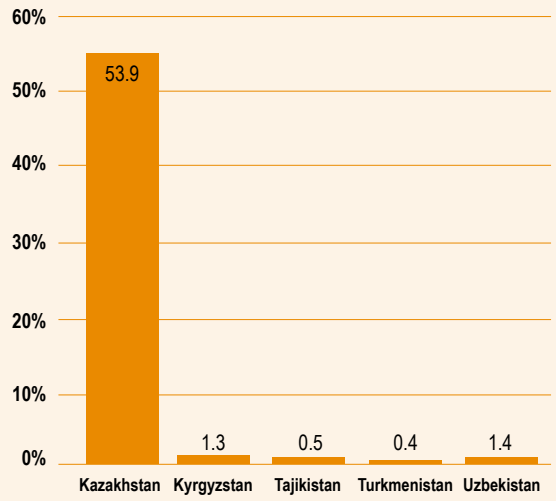
Country	State budget ($ million)	Local budgets ($ million/%)	Government agencies	Emergency material reserves
Kazakhstan	<612 (1)	**2%**	NA	Yes
Kyrgyzstan	2	**NA**	NA	Yes
Tajikistan	3.54	**NA**	NA	Yes
Turkmenistan	NA	NA	NA	NA
Uzbekistan	23.3	NA	NA	Yes

Sources: The information provided in the table is from official statistics provided by governments of all Central Asian countries for 2008-09.
Notes: (1) Kazakhstan potential allocation to the emergency fund is assumed equal to 2 per cent of the 2008 Republican and local budgets combined at the $/Tenge exchange rate of 1/151.

Size of disaster funds. Figure 2 compares damages from a catastrophic event in Central Asia with a 200-year return period with annual national disaster funds. It can be seen that except for Kazakhstan, which has a very large economy, government fiscal resources earmarked for emergency funding in the four other countries are very small compared to potential economic and fiscal damages that may be caused by large catastrophic events. In general, the average annual budgetary allocation for disasters caused by natural hazards rarely exceeds 1 per cent, which is grossly inadequate given the small size of national economies (except for Kazakhstan) and the very large size of a potential economic loss expected from large disasters caused by natural hazards.

Disbursements. Disbursement of surveyed disaster emergency funds is subject to approvals by several special government committees (at both local and central levels), which can be quite time-consuming. The disbursements typically are triggered by a passage of a special government decree. None of the countries surveyed required a declaration of national emergency as a precondition for the fund disbursement.

Figure 2: Emergency Funds/ Economic Loss from a 200 - Year Event (%)



Eligibility. In most countries, the emergency assistance aid can be made available to households, businesses and local governments. None of the countries has a means-testing requirement as a precondition of the aid. There is no delineation of government and private-sector liabilities when it comes to funding the loss in the aftermath of a disaster.

Amount of assistance. Due to the rather limited financial resources, disaster funds can only reimburse a small fraction of total losses sustained by most disaster victims. These amounts vary from $550 per person in Tajikistan to $1,200 per person in Kazakhstan. Government assistance is not in any way linked to the presence of insurance coverage at the time of a disaster.

Conclusions

The countries of the region are fiscally vulnerable to disasters caused by natural hazards as potential losses from a large-size catastrophe event can exceed by many times the budgetary resources earmarked for disasters. The existing emergency budgetary mechanisms in the countries of the region are simply not capable of dealing with large-size catastrophic events.

To address the existing fiscal vulnerability of governments and of households to disasters caused by natural hazards, the governments of Central Asia should consider putting into place ex-ante risk financing mechanisms, which should include:

- National and possibly regional catastrophe insurance pools for Central Asia.
- Quickly disbursing contingent credit facilities currently offered by development lenders (World Bank and ADB).
- Risk transfer (either through the issuance of a catastrophe bond or a reinsurance contract at a macro-level) of the country disaster risk to international reinsurance or capital markets.

Kazakhastan

According to the Ministry of Finance, the only source of Government funding for disasters caused by natural hazards is the Emergency Government Reserve Fund, which is financed from annual State budget allocations. Annual allocations to the Reserve Fund can be up to 2 per cent of the total annual budget. However, this appears to be the maximum possible budgetary allocation in case of a national emergency, which in normal times remains unfunded. The unclaimed amounts cannot be carried forward. Due to the highly-centralized intergovernmental fiscal relations in Kazakhstan, the Reserve Fund is also the main source of emergency funding for regional and local governments. Although the latter are required to allocate at least 2 per cent of their own budgets for emergencies, in practice very few do so from their own resources, which are limited. Table 12 summarizes annual budgetary expenditures of the Reserve Fund from 2006 to 2008.

Table 12: Annual emergency expenditures financed by the Reserve Fund

Year	2006	2007	2008
Amount ($)	3,451,500	7,934,290	4,098,361

Source: MoF, 2009.

As can be seen from Table 12, the amounts allocated from the budget for emergencies are rather small. The funds referenced in Table 12 were used to provide emergency assistance and reconstruction works in the areas affected by disasters caused by natural hazards in Kazakhstan and neighbouring countries. While being sufficient to address small-size emergencies, the Reserve Fund would have been clearly inadequate in the case of a severe catastrophic event. For instance, according to the Ministry of Emergencies, even during the recent floods in the south-Kazakhstan and Kazlardinski regions, Government assistance was sufficient only to provide up to 100,000-200,000 Tenge to the owners of properties destroyed by the floods (about $800-$1,600 per destroyed property), which is only a fraction of the property replacement cost.

In addition to the Emergency Reserve Fund, there is also a Material Reserve consisting of essential supplies and materials needed in the event of an emergency.

Kyrgyzstan

According to the Ministry of Emergencies, the only source of funding in the Republic is the Emergency Fund of the Cabinet of Ministers. In 2008, the allocations to the fund were about $1 million, while for 2009 the allocation is $2 million.

Given the very limited Government resources dedicated to disaster risk financing, the Government should consider putting in place ex-ante risk financing mechanisms that can help address the urgent liquidity needs in case of a major catastrophic event.

Tajikistan

The main source of funding for disasters caused by natural hazards in Tajikistan is the State budget, which contains a contingency fund for funding emergency relief operations (for example, for the rehabilitation and enhancement of water-development facilities, canals and irrigation systems; bank protection; the rehabilitation of roads and other economic facilities affected by an emergency; as well as for providing one-off financial assistance to the population for recovery of affected houses, etc.)[13].

Funding is allocated at the discretion of the State Commission on Emergency Situations of the Government of the Republic of Tajikistan, depending on the scale of disaster and total damage. For example, in 2008 the total sum allocated for the strengthening of river banks was 10 million Somoni ($3 million); for one-off assistance to the affected population and families of victims, more than 154,000 Somoni ($40,000); and for subsidized loans to environmental migrants, more than 1.8 million Somoni ($0.5 million).

The issues of prevention of emergencies and relief operations are regulated by the law of the Republic of Tajikistan "On Protection of Population and Territories from Natural and Man-made Emergencies" of 15 July 2004.

Funding of emergency relief operations depends on the scale and classification of an emergency situation and is provided at the local level by organizations and institutions, administrations of oblasts, towns and districts and in the case of trans-border zones from the contingency fund of the State budget of the Republic.

The period of funding allocation depends on a decision of the State Commission on Emergency Situations under the Government of the Republic of Tajikistan.

Financial assistance is provided to the affected population for reconstruction of housing or resettlement in cash up to a

13 Resolution No. 517 of the Government of the Republic of Tajikistan of 12.02.2003.

limit of 2,000 Somoni ($550), depending on the family structure, 300 Somoni ($83) for a family member who has been killed[14] and 3,000 Somoni ($830) as a subsidized loan for resettlement to a safe area with a free allocation of a land plot to build housing.

The affected population receives financial compensation from the State in accordance with the following assistance and according to the following schedule:

a) 1,000 Somoni ($277) – for housing reconstruction in cases of completely-destroyed housing:

- 100 Somoni ($28) – one-off financial assistance to the head of household.
- 50 Somoni ($14) – to each household member.

b) in cases of partially-destroyed housing, the amount of Government assistance is as follows:

- housing repairs – 300 Somoni ($84).
- one-off financial aid to the head of household – 100 Somoni ($28).
- to each household member – 50 Somoni ($14).

Turkmenistan

Unfortunately, no specific information about disaster risk financing sources was provided by the Government. However, it appears that the country does not have a special emergency fund allocation in the national budget due to the limited budgetary space. The financial assistance in the aftermath of disasters caused by natural hazards appears to be allocated ad hoc depending upon availability of financial resources in the central budget and willingness of the Government to provide such emergency assistance. We have been informed, however, that in 2008 the President established a special Disaster Prevention and Rescue Services department in the Ministry of Defense. The new Government service was financed with a $25 million budget earmarked for buying rescue equipment and acquiring proper training.

Uzbekistan

According to Article 7 of the national Emergency Law15, the key sources of risk funding in Uzbekistan come from the following sources:

- The Emergency Fund of the Cabinet of Ministers.
- The emergency funds of the regional authorities.
- The emergency funds of linear ministries.

The Law stipulates that the Cabinet Ministers are responsible for allocation and eventual utilization of financial and material reserves for preventing as well as addressing national emergencies. Due to the highly-centralized nature of intergovernmental fiscal relations in Uzbekistan, it appears that in the case of disasters caused by natural or technological hazards regional and local authorities have to request disaster-related transfers from the central

14 Resolution No. 517 of the Government of the Republic of Tajikistan of 12.02.2003.

15 Protection of Population and Land from Natural and Man-made Disasters, Law N 825-I, 08/20/1999.

Government up to the original budgetary limit envisaged for each territorial unit, and in the case of large catastrophes for an additional allocation from the central Emergency Fund. As neither local governments nor Government agencies have their own financial resources in excess of those provided by the central budget through intergovernmental fiscal transfers, unforeseen emergency expenditures must be financed from the annual central Government budget. The total amount of annual budgetary allocations for national emergencies over the period 2003-2009 is provided in Table 13.

Table 13: Reserve Emergency Fund of the Cabinet of Ministers and combined emergency budgets of territorial units (2003-2009)

	2003	2004	2005	2006	2007	2008	2009
UZ soum (billion)	55.9	37.7	17.9	19.5	20	31.5	34.18
$ million (at official exchange rate)	57.5	37.0	16.1	16.0	15.8	23.9	23.3

Source: Uzbekistan annual budget resolutions.

As can be seen from Table 13, the annual budgetary allocations for emergencies are very small. For instance, in the event of a repeat of a disaster of similar magnitude to the 1966 Tashkent earthquake the budgeted emergency allocation would be sufficient to cover less than one per cent of economic losses.

IV Conclusions

Despite considerable risk exposure to disasters caused by natural hazards, the existing risk financing mechanisms in the countries of Central Asia do not have the capacity to address the consequences of large catastrophic events. Hence, reducing the adverse financial impact of disasters caused by natural hazards on governments, businesses and households in the region must be regarded as an important economic and social priority at the national and regional level. Investing in the development of market-based catastrophe risk transfer systems at both national and regional levels would bring numerous economic and fiscal benefits. In the case of governments, national and regional risk transfer programmes would help reduce the contingent fiscal liabilities of governments arising out of their excessive risk exposure to natural hazards, enable them to receive access to immediate liquidity in the aftermath of catastrophic events, and would help to mitigate the adverse impacts of natural hazards on fiscal stability and economic growth. In the case of households, access to affordable market-based catastrophe insurance would serve as an important financial safety net that would help millions of homeowners to protect their life-time savings embedded in house equity and hence avoid financial ruin. For businesses, access to catastrophe insurance and financial weather hedging instruments would reduce the adverse impacts of natural hazards on their earnings and hence would reduce the cost of borrowing and result in improved business valuations.

Several recommendations emerge from this study. They are intended to guide government policymakers in developing and applying national and regional disaster risk financing strategies, suggest ways in which World Bank staff and managers can better address catastrophe risk financing in their dialogue with clients, and provide information and ideas that may be of value to other stakeholders, such as international donor organizations, NGOs, academics and the general public.

Lessening the impact of disasters caused by natural hazards on government budgets.

The numerous earthquakes that have devastated the region in the past clearly demonstrate that large disasters caused by natural hazards can be very costly and can have major negative impacts on national economies and government budgets. Yet no government in the region, except perhaps of Kazakhstan, has adequate fiscal capacity of its own to cope with the financial consequences of large catastrophe events. But even in the case of Kazakhstan, despite its relatively large budgetary allocation earmarked for national emergencies, the maximum post-disaster aid to victims of disasters caused by natural hazards is unlikely to exceed $1,000 per household, which places the financial burden of housing reconstruction squarely on the shoulders of affected homeowners and businesses.

To address government fiscal exposure to disasters caused by natural hazards, countries may consider putting in place stand-by ex-ante disaster risk financing mechanisms, which would grant them immediate access to liquidity in the case of disasters caused by natural hazards. Stand-by credit facilities, also known as contingent capital, can now be obtained from both the IBRD and ADB.

Reducing the financial vulnerability of homeowners and SMEs to natural hazards.

Despite major loss potentials from disasters caused by natural hazards, the study documented an almost non-existent level of catastrophe insurance coverage among homeowners and SMEs in Central Asian countries. Such low levels of insurance penetration can be partially explained by a combination of many factors on both the supply and demand sides. These include a lack of risk awareness; the distrust of the population in the ability of local insurers to pay claims in case of a major disaster; the reluctance of insurers to actively market catastrophe insurance coverage on a wide scale due to difficulties with obtaining reinsurance; the complexity of internal risk management procedures for catastrophe risk; and the highly capital-intensive nature of the business. In an attempt to explain the low insurance penetration for catastrophe risk, it is possible to point out the still rather nascent stage of insurance industry development in the region, and the relatively low incomes of most of the population.

In this context, the countries of Central Asia should consider instituting a regional catastrophe insurance pool that would act as a regional aggregator of catastrophe risk and help the local insurance industry to access the global reinsurance market on better pricing terms. It may also be advisable for the countries of the region with larger-size economies – such as Kazakhstan – to consider creating national catastrophe insurance pools which could provide efficiently-priced standalone catastrophe insurance to homeowners and small business owners. The relatively large size of the Kazakhstan economy and the more advanced state of development of its insurance market may also provide for the development of a regional catastrophe insurance scheme on the basis of the national Kazakh catastrophe insurance programme. Such a programme could then be extended to other countries of the region.

The risk pooling arrangement for the Central Asian countries could be modelled after the regional Southeastern and Central Europe Catastrophic Risk Insurance Facility, which is currently being developed by the World Bank, UNISDR and the Regional Cooperation Council for SEE countries.

As has been demonstrated by international experience, such programmes can provide highly-affordable coverage by realizing the benefits of country-wide risk diversification, economies of scale and the ability to obtain better pricing terms from the global reinsurance market. The first country-wide catastrophe risk pool in an emerging market, the Turkish Catastrophe Insurance Pool, was pioneered and successfully launched with the World Bank's assistance by Turkey in 2000. Work on a similar programme in Romania has reached a fairly advanced stage.

Annex I

List of people met during the February 2009 mission

Name	Affiliation	Position	Country
Kuanysh Dautov	Eurasia Insurance	CEO	Kazakhstan
Sergey Tuganov	Insurance Company AIG	CEO	Kazakhstan
Ivan Mikhailov	Kazakhinstrakh	Deputy Chairman of Board	Kazakhstan
Sergey Sukharev	Kazkommertspolicy	Chairman of Board	Kazakhstan
Dilyara Karakulova	Insurance Supervisory Agency	Director	Kazakhstan
Telgat Ussenov	Centras Insurance	Chairman of Board	Kazakhstan
Alikhan Smailov	Ministry of Finance	Vice Minister	
Inessa Umbetova	Mimistry of Finance, Department for Strategic Development	Head	Kazakhstan
Ablai Sabdallin	Ministry of Emergency Situations	Vice Minister	Kazakhstan
Asemgul Khamzina	Ministry of Emergency Situations, International Cooperation Department	Head	Kazakhstan
Chinara Davletkeldieva	Financial Market Supervision and Regulation Service	Deputy Chairwoman	Kyrgyz Republic
Uchkunbek Tashbaev	Office of the President, Economic and Social Policy Department	Head	Kyrgyz Republic
Dinara Tezekbaeva	Kyrgyzinstrakh	Deputy Chairperson	Kyrgyz Republic
Yorkin Tursunov	Ministry of Finance	Deputy Minister	Uzbekistan
Tuychi Turagalov	Ministry of Emergency Situations	First Deputy Minister	Uzbekistan
Olimjon Ikramov	Ministry of Finance, State Insurance Supervisory Board	Head	Uzbekistan
Ikrom Khalimov	Ministry of Finance, State Insurance Supervisory Board	Deputy Head	Uzbekistan
Oybek N. Khalilov	Insurance Company AIG	General Manager	Uzbekistan
Maksud Yakubov	Uzbekinvest	General Manager	Uzbekistan
Gulnora Makhmudova	Alfa Invest	General Manager	Uzbekistan
Majit Kamilov	Trans Insurance Re	Deputy General Manager	Uzbekistan
Shukhrat Nurmatov	Uzagrosugurta	Chairman	Uzbekistan
Shavkat Sokhibov	Ministry of Finance	Deputy Minister	Tajikistan
Iskandar Sharipov	Oryon Insurance	General Manager	Tajikistan
Safarov	Tajiksigurta	Director	Tajikistan
Sanobar Khomidova	Insurance Supervisory Authority	Chairlady	Tajikistan
Nurmuhammet Sopyyev	The State Insurance Organization of Turkmenistan	Chief of Insurance Operations	Turkmenistan
Gochmurad Muradov	Central Bank	First Deputy Chairman	Turkmenistan

Annex II: List of organizations and institutions

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	Natalia Kim - Press-Secretary	
	Syrym Gabbasov - Director Department of Prevention Emergency Situations and Perspective Development	
	Asemgul Khamzina - Head of International Cooperation Department	

Name of Institution	Contact Person/Title	Mailing Address
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Name of Institution	Contact Person/Title	Mailing Address
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Insurance Company "Oriyon Insurance"	Sharipov Iskandar - General Director	Ave. Rudaki, 100, Dushanbe
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Central Bank	Abdukarimov R. - Deputy Chairman	
Ministry of Finance	Yorkin Tursunov - Deputy Minister	
Ministry of Emergency Situations	Tuichi Turagalov - First Deputy Minister	
"Alfa Invest"	G. Makhmudova - General Director	
UZAIG	O. Khalilov - General Director	
"UZagrosugurta"	Sh. Nurmatov Sh. - Chairman of the State Insurance company "UZagrosugurta"	
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