

# Armenia

## National progress report on the implementation of the Hyogo Framework for Action (2009-2011)

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## Outcomes for 2007-2009

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### Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

#### **Outcomes:**

Certain achievements were gained in the field of incorporation of disaster risk management outlines into development plans and programs of the Government of the Republic of Armenia.

In particular, Emergency response commission was established in 2010.

Works on the establishment of Disaster Risk Reduction Fund are carried out.

Thanks to support of UNDP, creation of National Disaster Observatory and Disaster Risk Reduction National Platform is in development phase.

### Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

#### **Outcomes:**

Zoning schemes of communities are developed.

3-year development plans for marzes are working out, which incorporate measures of disaster risk reduction in communities.

### Area 3

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

#### **Outcomes:**

According to range of bilateral and multilateral agreements with international partners (JICA, SDC, US, UK, etc.) mechanisms and tools of mobilizing the resources and capabilities for municipal services in order to counteract disasters are in place.

# Strategic goals

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## Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

### **Strategic Goal Statement 2011-2013:**

a) By the decision of the Government of the Republic of Armenia N 1207-#1053; dated on 30.10.2008 "Program of stable development" was adopted that includes tasks of reduction of main factors of risk including tasks of reduction of seismic risk and management of landslide disasters and stability of buildings and constructions.

b) Elaboration of national bases of political, legal, public and information adherence of scientific knowledge with the aim of elaboration of effective mechanisms of respond to catastrophes of natural-technical system and mechanisms of the shortening of risks and disasters.

Establishment of conceptual, organizational, scientific-technical structures, bringing to the minimum the vulnerability and risks of disaster for providing stable functioning of the economy.

c) Participation in a new inter-state program of joint scientific researches of CIS member countries about prevention and liquidation of emergency situations for the period of 2005-2015, corresponding to the purposes and tasks of Hyogo frame program on protection from national, regional and trans-boundary hazards and catastrophe.

In the new stage (2005-2015) of scientific-technical cooperation it is foreseen to establish state bases of legal and normative-technical base on the analysis, management and reduction of risks of emergency situations and protection of population, territories and environment from accidents and catastrophe of natural and man-made character as well as reduction of their consequences on the base of unified criteria of risks.

## Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

### **Strategic Goal Statement 2011-2013:**

a) The Ministry of Emergency Situations of the Republic of Armenia bears the responsibility for the maintenance and realization of mechanisms of adequate preparation for the response to emergency situations by local self-governing bodies and population as well as preparedness towards potential disasters.

Realization of activities in the places is carried out based on the daily activities in specialized territorial departments timely responding to emergency situations of natural and man-made character and preparation of the population of communities to possible emergency situations, response and consequence liquidation.

Special table-top exercises on response to emergency situations are carried out with the participation of local self-governing bodies and large groups of population.

b) Scientific-methodological council of the Crisis Management State Academy of the Ministry of Emergency Situations of the Republic of Armenia was able to publish special educational literature explicitly reflecting the principles of behavior of population in case of occurrence of hazardous natural phenomena and man-made processes.

c) Development of mechanisms and institutional statements are fixed by the laws of the Republic of Armenia about "Population Protection in case of Emergency Situations", "Civil Defense", "Seismic Protection", "Fire Security", as well as by the decisions of the Government of the Republic of Armenia about "Concept of state policy of support in case of Emergency Situations", "Establishment of state

commission on assessment and compensation of damages caused by natural disasters".

### **Area 3**

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

#### **Strategic Goal Statement 2011-2013:**

As a current activity on development of methods of risk reduction a number of programs were implemented on the management of ecological security on the account of budget and investments:

- “Assessment of development of negative phenomena of exogenous and anthropogenic processes in the territory of Kotayk region of RA” (ARS of MoES RA, 2008);
- “Management of disasters in local level” (“Program of preparation to disasters and strengthening of national capacities of risk reduction” UNDP, ARS of MoES of RA, 2010);
- “Assessment of risk of development of negative flood (mudslide) and landslide processes in the territory of Lori and Tavush regions” (ARS of MoES of RA, Armenian Red Cross Society, 2008);
- “Concept of management of landslide processes of the Republic of Armenia” Ministry of Urban Development of RA (11.01.2007);
- Monograph on “Landslides of Armenia” (OSCE, Yerevan, 2009)
- Concept of prevention of stone-falls in the territory of RA  
(Statement of Protocol Decision of the meeting N8 of the Government of RA dated on 19.02.2009).

## Priority for action 1

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 1: Core indicator 1

*National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels.*

#### Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### Means of verification:

- \* Is DRR included in development plans and strategies? Yes
- \* Yes: National development plan
- \* Yes: Sector strategies and plans
- \* Yes: Climate change policy and strategy
- \* Yes: Poverty reduction strategy papers
- \* No: Common Country Assessments (CCA)/ UN Development Assistance Framework (UNDAF)

#### Description:

Some key contextual factors of the assessment of the activities of countries in the field of DRR

Involvement in the realization of mechanisms of enhancement of stability towards risks of municipal and community administrative bodies is being implemented.

In particular, preparation of plans of actions in the field of reduction of risk of natural and man-made disasters by means of forces of community management of ARS of MoES of RA for the period of 2011-2014.

A considerable place in the field of DRR is given to program plans of improvement of General plan of development of Yerevan city. Connected with the activation of constructional mastering of territory and erection of many-storied inhabited and public buildings both in the studied and built-up territories it became important to define seismic stability of buildings in the territory of the city and to improve seismological and constructive characteristics of new buildings and constructions.

#### Context & Constraints:

Unfortunately, resources used for the reduction of risk of disasters are allocated mainly for the liquidation of consequences. The fact that the overall expenses for the reduction of risk of disaster would be lower is not taken into consideration, if risk is taken into account in program decisions on the elaboration of projects for the study and development of infrastructure of the territory. The mentioned statement defines the level of progress consisting in:

- a rather important progress in forming plans and programs on the reduction of risk with certain achievements in the field of periodic strategic institutional adherence depending on known and previously mentioned limitations in potential and resources.

## Priority for action 1: Core indicator 2

*Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels*

### Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

### Means of verification:

- \* Is there a specific allocation of budget for DRR in the national budget?
- \* 52 % allocated from national budget
- \* 13 USD allocated from overseas development assistance fund
- \* 20 USD allocated to hazard proofing sectoral development investments (e.g transport, agriculture, infrastructure)
- \* 11 USD allocated to stand alone DRR investments (e.g. DRR institutions, risk assessments, early warning systems)
- \* 4 USD allocated to disaster proofing post disaster reconstruction

### Description:

Depending on the genetic nature of catastrophes the assessment of the risk of the possible emergencies is decided by the MES of RA jointly with partner agency and institutional organizations on the basis of possible financing of definite implementers. In a result of assessment of dangers and risks of emergencies of natural-man-made origin the joint complex conclusion is compiled with the recommendations for the implementation of definite engineer-protective measures or additional definite program clarifications, investigations and researches.

Decentralization in conduction of investigations and researches of the nature of emergencies as well as the assessment of damages from the occurred dangerous events is provided by the inclusion municipal bodies and local services as well as population suffered from dangerous processes.

### Context & Constraints:

While assessing the level of progress in reaching the objectives in sphere of risk reduction it must be mentioned that institutional loyalty to some extent is reached but the achievements are incomplete as resources and capacities are limited.

## Priority for action 1: Core indicator 3

*Community Participation and decentralisation is ensured through the delegation of authority and resources to local levels*

### Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

### Means of verification:

- \* Do local governments have legal responsibility and budget allocations for DRR? Yes

\* Yes: Legislation

\* Yes: Budget allocations for DRR to local government

**Description:**

Local municipal and community bodies bear responsibility for DRR, but concrete budgetary financial means are not provided. Resources are included in the annual budget of the country for DRR according to the timely planning measures for the reduction of vulnerability of natural and technical objects. Taking into consideration the insufficiency of financial provision, regional, large-scale tasks, as a rule, are planned for stage by stage realization. In case of acute necessity for the elimination of the consequences of dangerous processes, financial means are provided from the reserve funds according to the governmental decision.

**Context & Constraints:**

National administrative structures and partner institutional organizations operate on the basis of special contract obligations according to the intentions that join together 14 professional organizations, which participate in the process of the solution of DRR problems depending on the origin of the dangerous process.

A certain list of professional participation in the research is fixed for each subdivision of member-organizations of the agreement therefore there are no difficulties in the realization process of DRR.

**Priority for action 1: Core indicator 4**

*A national multi sectoral platform for disaster risk reduction is functioning.*

**Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Means of verification:**

\* Are civil society organisations , national planning institutions, key economic and development sector organisations represented in the national platform? No

\* 0 civil society members (specify absolute number)

\* 0 sectoral organisations (specify absolute number)

\* 0 women's organisations participating in national platform (specify absolute number)

**Description:**

The National Program on DRR is in stage of development. Special commission of representatives of corresponding ministries and agencies has been created with active consultative support of UN office in Armenia, which according to "Guideline for establishing National Platform for DRR" and "Practical guideline for HFA monitoring and review 2009-2011" should be presented this year. Acquaintance with above-mentioned documents showed that a range of developments in DRR has been already implemented in Armenia.

**Context & Constraints:**

The necessity of the improvement of methodical mechanisms for the complex assessment of the risk:  
a) of break and possible destruction of hydro - constructions with provision of timely population



awareness – 2005-2006;

b) of heavy metals on urbanized territories (underlining of factors and groups of risk, mapping &#1052;1:10000);

c) of natural and man-made radiation activeness of the territories of Ararat valley. Monitoring in the system of atmospheric sediments: water- soil –plants 2005;

d) of the development of methods of risk vulnerability reduction: engineering-geo-morphological and ecologic assessment, mapping, zoning of the territory according to the factors of risk – 2006.

e) of the biogeochemical stream of chemical elements in the ecosystem: criteria of the resistance of factors of man-made effects. Assessment of influence of mining enterprises on the environment and the technology of influence of anti-filtering barriers on tail-reservoirs.

Reference document:

> Concept Note National Platform Armenia (2010)

[http://preventionweb.net/files/14810\\_arnapconceptnote.doc](http://preventionweb.net/files/14810_arnapconceptnote.doc) [DOC ]

> Notification of establishment of National Platform Dec 2010 (2010)

[http://preventionweb.net/files/14810\\_officialletterrenparmenia.doc](http://preventionweb.net/files/14810_officialletterrenparmenia.doc) [DOC ]

## Priority for action 2

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 2: Core indicator 1

*National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.*

#### Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### Means of verification:

\* Is there a national multi-hazard risk assessment available to inform planning and development decisions? Yes

\* Yes: Multi-hazard risk assessment

\* 32 % of schools and hospitals assessed

\* 0 schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* Yes: Agreed national standards for multi hazard risk assessments

#### Description:

In accordance with the recommendations of HFA the spheres of activity envisage basic indicators of monitoring, review of the progress and difficulties in carrying out the thematic of DRR:

1. The operations concerning the formation of data banks on dangers are completed: land-slide, mud-slide, flood with respective characteristics of conditions of inundation and under flooding; geodynamical condition of the territory of the republic and its zoning according to the degree of mud-slide risk; assessment of the contamination risk of water systems with chemical compounds of industrial wastes; the condition of pressure hydro technical, land reclamation and other engineering institutions.
2. Periodical control is carried out in all the mentioned regional systems and local objects and archive sources reflecting operative situation of key dangers and vulnerability are accumulated.
3. Elaborations on basic threats are partially functioning (land-slides, breaks of hydro institutions) and basically they are carried out for the formation of systems of early warning for informing the personnel of objects and population, which are within the zone of catastrophic influence.
4. National, regional and local assessment of risks envisages regional cooperation in the sphere of risk prevention and reduction.

#### Context & Constraints:

Marking certain achievements in performance progress, "the basic indicators", specified above, it is necessary to note the basic difficulties of national structures and the partner organizations concerning their mapping non-uniformly scaled material (M 1:10000: 1:5000: 1:2500: 1:2000: 1:1000), for modeling of conditions, a mark of a possible damage and division into districts of territories on risk degree. Level of progress in the field of initiatives and target programming and planning of problems on risk decrease reached for the accounting period will allow to solve questions of standardization of a technique of quantitative definition of damages on display of numerous processes of natural - technical

genesis, to use cartographical and mathematical modeling of natural-technical systems with the forecast of possible extreme display of this or that process, are developed adaptable and preventive protection of territories and the population on the basis of division into districts on risk degree.

## **Priority for action 2: Core indicator 2**

*Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities*

### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

### **Means of verification:**

\* Are disaster losses systematically reported, monitored and analysed? Yes

\* Yes: Disaster loss database

\* Yes: Reports generated and used in planning

### **Description:**

The national complex evaluation of risk promotes acceptance of rational decisions in the field of planning and development.

In particular in Armenian Rescue Service (ARS) of the Ministry of Emergency Situations of RA the elaboration of documents has been executed:

“The basic directions of increase of stability of functioning of economy in emergency situations”, “Social-economic problems of emergency situations and the system analysis of an exit from emergencies”, “The qualitative and quantitative evaluation of damages of consequences of emergency situations and settlement mechanisms of increase of readiness of economy to functioning in emergency situations”.

Achievements in the field of institutional adherence of the country to reaction to various dangers and its social, economic and ecological vulnerability have found reflection and support in legislative base of the state and special governmental orders of RA:

- Laws of RA – “On population protection during emergency situations” - 02.12.1992., “On Seismic protection”-12.6.2002,

- Government decisions – “On Conception on assistance state policy during emergency situations” (N 726 from 19.11.1998); “On statement of an order of elaboration, examination, coordination and statement of general layouts of cities and rural communities” (N 609 from 02.03.2003); “On works on evaluation of damages caused by emergencies to buildings and constructions, being in state ownership” (N 753 from 14.08.2010); “On resettlement of tenants from inhabited emergency buildings” (N 130 from 05.03.1999); “On order of the organization of the urgent assistance to the population at droughts, other acts of nature and technical accidents” (N 248 from 13.03.2008).

Especially it is important to note the performance of researches by a complex evaluation of influence natural-technical disasters on activity in the field of town-planning development of territories and certification of safety of before erected buildings.

It is important to note the work of National service of seismic protection of Ministry of Emergency Situations of RA under the recommendation of increase of stability and operational reliability of buildings in the cities Gyumri, Vanadzor, Kapan on the basis of tool definition of physical characteristics of bearing constructions of buildings, and also seismicity with recommendations about strengthening of constructions: 46 schools of Yerevan were examined for assessing exploitation risk with granting of recommendations on vulnerability reduction (2005-2007).

For complex evaluation of DRR on vulnerability of buildings and constructions from natural-technical

emergencies the Ministry of urban development of RA (2008) has developed the following national standards and methodical positions:

- A study guide on realization of researches of a technical condition, seismic and operational safety of inhabited and public buildings;
- Certification of buildings and constructions;
- Statement about researches of industrial buildings and constructions.

Armenia is a small highland country with a sharp continental climate; mountain and foothill sites occupy over 70 % with her geodynamic types of territory. Geodynamic position, high irregularity relief and seismic conditions promote display of dangerous natural-technical processes.

Marking the fruitful work of the Center of monitoring of Department on protection of the population and territories of ARS of the Ministry of Emergency Situations of RA on gathering, generalization and the timely analysis of a condition and threats from dangers and risks of natural and man-made accidents, it is necessary to note that the Monitoring Center needs technical re-equipping and thanks to the " Program of preparation for disasters and strengthening of national capacities on risk reduction" UNDP, the program "Creation of the observant centre for natural disasters" is carried out that will undoubtedly increase the capacities of Monitoring Center.

### **Context & Constraints:**

The complex evaluation of multiple-factor synergetic connected processes and risk management is an important state problem.

It is important to note that the negative evaluation of dangers on the territory of the Republic is carried out practically everywhere as in respect of the natural phenomena in natural-technical system, and in respect of technical filling. Qualitative evaluation of damages caused by dangerous processes is in stage of the stage-by-stage solution in each continuous geological display.

### **Priority for action 2: Core indicator 3**

*Early warning systems are in place for all major hazards, with outreach to communities.*

### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

### **Means of verification:**

\* Do risk prone communities receive timely and understandable warnings of impending hazard events?  
Yes

\* Yes: Early warnings acted on effectively

\* Yes: Local level preparedness

\* Yes: Communication systems and protocols

\* Yes: Active involvement of media in early warning dissemination

### **Description:**

The assessment of four elements of the early warning from possible HFA - knowledge of risk, monitoring and prevention service, distribution of the information and communication, reaction potential, is in the Republic at various levels of development and the realization, which demands separate consideration.

Risk knowledge

In some special, disastrous dangerous zones of development of the natural phenomena and

technogenic processes the scientific elaborations are fulfilled.

- a) In particular, the department of seismic safety of MES of RA has developed mechanisms of an estimation of seismic risk for the territory of the Republic (2005) and for territory of Yerevan (2007).
- b) Creation of a map of quantitative evaluation of seismic risk of territories of RA on the basis of seismometric potential and engineering-geological conditions with taking into account natural and technogenic factors on the basis of GIS-TECHNOLOGIES (2007)
- c) The elaboration of methodical guideline according to damages and risks of losses from earthquakes (ARS of the Ministry of Emergency Situations of RA – 2006-2007)
- d) The Program on estimation of natural-technical, social, ecological-economic, biological, agricultural plans for territories of RA (ARS of the Ministry of Emergency Situations of RA 2008-2010) is in final stage
- e) The elaboration of methodology of the automated analysis of degree of environment pollution by manufactures with strong poisonous substances on chemically dangerous objects (CDO) ARS of the Ministry of Emergency Situations of RA – 2005-2006.
- f) The evaluation of risk of possible failures on CDO, actions for decrease or prevention of dangers and protection of the population living in a zone of risk. Methodical recommendations about formation of passports of safety of CDO with mechanisms of prevention of emergencies. ARS of the Ministry of Emergency Situations of RA – 2006.

#### Monitoring

Unfortunately, works on formation of three-level monitoring are suspended, but the positive elaboration on structure, budget, level-triggered to conditional appointment, organizational and technical works are finished and are on an expert evaluation.

At present, each ministry and administration has professional monitoring or control in his interesting directions. The information on periodic control is generalized in the end of the year, analyzed and transferred to the Seismic Control under the Government RA which forms the information on a year in the form of corresponding to each of names of reports with which the institutions and the population can get acquainted.

#### Notification and danger warning system

The system of the early warning and notifying of population is developed for emergency situations connected with the estimation of risk in case of devastating earthquakes (the natural phenomenon), as well as at environmental contamination at failure on CDO and emission of radioactive substances in atmosphere (technogenic process), and also at possible break of pressure head hydraulic engineering constructions.

#### Context & Constraints:

The centralized system of early warning of population does not functioning.

It is necessary to note the complexities in DRR warning in the mining industry. Unfortunately, in this area often causing serious economic infringements, it is learnt only through mass media.

#### Priority for action 2: Core indicator 4

*National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.*

#### Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### Means of verification:

\* Does your country participate in regional or sub-regional DRR programmes or projects? Yes

- \* Yes: Programmes and projects addressing trans-boundary issues
- \* Yes: Regional and sub-regional strategies and frameworks
- \* Yes: Regional or sub-regional monitoring and reporting mechanisms
- \* No: Action plans addressing trans-boundary issues

**Description:**

The national evaluation of risk provides its use in regional-transboundary cooperation, information exchange and early warning as well as accessible information on the data of regional risks. In particular, in 2004 National Service for Seismic Protection of the Ministry of Emergency Situations of RA together with Institute of the Urbanization of Georgia and Institute of Seismology of Azerbaijan has developed the mechanisms of risk evaluation of seismic zoning maps of territory of Yerevan, Tbilisi and Baku by united methodical indications with an exchange of materials and results of researches. In 2003 ARS of the Ministry of Emergency Situations RA together with Security Department and the Ministry of the Urbanization of Georgia have carried out teamwork according to risk of damage of adjacent territories and transport communications from natural-man-made processes in 50 km zone from each of the countries. The work was carried out on the basis of the intergovernmental agreement. Realization of the Program of researches and investigations and the report with the appendix of maps of the Georgian models of scale 1:100000 (regional level) 1:25000 have allowed to estimate risk of infringement of the transport communication between the countries and to recommend actions of engineering protection of territories and transport communications.

**Context & Constraints:**

Because of absence of diplomatic relations with Turkey and Azerbaijan the joint regional and transboundary solution of problem on DRR are impossible at present.

## Priority for action 3

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 3: Core indicator 1

*Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)*

#### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### **Means of verification:**

\* Is there a national disaster information system publicly available? Yes

\* Yes: Web page of national disaster information system

\* Yes: Established mechanisms for accessing DRR information

#### **Description:**

Use of knowledge, innovation and education required to develop and implement a culture of safety and sustainability of the natural-technical system (PTS), the main indicators of activation of the population and all sectors of society to a culture of disaster prevention:

- Access to information about hazards at all levels, through regional and community-based exercises, through media and television (a periodic publication of the special newspaper "Artakarg Tert " ("Emergency" weekly") and a weekly television program "Emergency Channel ");
- The introduction of all institutions of higher learning rate for the relevant departments, security issues and prevent emergencies;
- Training of specialists in higher education (Institute for Crisis Management) at the rate of population and territory from emergency situations of natural and anthropogenic origin;
- The introduction into school curricula of training courses on disaster risk reduction and appropriate behavior confront dangers;
- Development and implementation of mechanisms for integrated risk assessment of adequate and effective preventive measures in all ministries and departments, as well as municipal authorities;
- The issuance of a special cognitive popular literature intended for the general population in the area of human behavior and human adaptation to a particular emergency;
- a number of NGOs functions in Armenia dealing with environmental safety and human life; IAELS AO (Armenian branch of the International Academy of Ecology and Life), Armenian Branch of the REC Caucasus "and more than 60 public departments of environmental and economic territorial security, annual debate and find solutions to controversial issues of environmental safety. AO IAELS periodically publishes two issues a year, a special magazine "Herald" IAELS, reflecting the management arrangements for any risks in Armenia. The Internet site of the RA Ministry of Emergency Situations is functioning.

#### **Context & Constraints:**

Lack of organizational effort on making it difficult for all main and partner organizations in the security environment and humans.

Lack of funds for the organization of work in the field and communities for the development of mechanisms for DRR.

### **Priority for action 3: Core indicator 2**

*School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Is DRR included in the national educational curriculum? Yes
- \* Yes: Primary school curriculum
- \* Yes: Secondary school curriculum
- \* Yes: University curriculum
- \* Yes: Professional DRR education programmes

#### **Description:**

Since 1993, Crisis Management State Academy was created within MES of RA which operates till today and plays a central role in the preparation of the population, leading cadres of different levels and experts.

#### **Context & Constraints:**

Lack of funds for the organization of outreach trainings in the field.

### **Priority for action 3: Core indicator 3**

*Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.*

#### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### **Means of verification:**

- \* Is DRR included in the national scientific applied-research agenda/budget? Yes
- \* Yes: Research outputs, products or studies
- \* Yes: Research programmes and projects
- \* No: Studies on the economic costs and benefits of DRR

#### **Description:**

The main indicator

Authorities, scientific-research companies ("Georisk", "Geocom", "Iris") and non-governmental



organizations (AO International Academy of Ecology and Life, Armenian Technological Academy) play a key coordinating role in the development and implementation of research, modeling, with the goal to assess vulnerability and risk of natural and man-made disasters and ecological and biological processes realizing due to budgetary and investment tools as well as consultative assistance to international organizations (the Armenian branch of the United Nations, Department of the OSCE, the Coordination Council of CIS countries on prevention and liquidation of consequences of emergency situations).

#### Results and derivatives of researches

Studies to reduce the risk and consequences of possible disasters in Armenia increase awareness and preparedness for the adoption of administrative decisions:

1. The introduction of an integrated approach to the assessment of natural hazards and man-made impacts on the environment as an example of Yerevan, NICK "Geocom, 2003 (investing financing UNDG)
2. Geodynamic and geological engineering aspects of risk assessment from the manifestation of the exogenous production of RA, NICK "Geo", 2002-2003, UNDP funding
3. Assessment of vulnerability and reliability of areas and the aquatic environment from the manifestation of man-made objects and natural processes in mining objects of Syunik marz. 2003, "Iris" (PROON financing)
4. Geophysical model and expert system evaluation of seismic activity for Earthquake Risk Management, 2003-2007, Department of Emergency Nssp RA (Government funding)
5. Improving the information base of natural and man-made disaster in the territory of Armenia and the establishment of a common information base on actual damages for various emergencies for risk assessment. PAS MES RA - 2007 (Budget financing)
6. Evaluation of landslide hazard and risk from the manifestation of landslide genesis and activity in the territory of Armenia. Studies evaluating risk factors for activation of landslides and erosion, development of control mechanisms and engineering activities of seismization, landslide sites in Armenia. Ministry of Urban Development, NIC "Geo" 2004-2006. (Funding for the project under contract with Georgia LSAI)
7. Improvement and implementation of integrated risk assessment:
  - From heavy metal pollution in urban areas (2005)
  - From natural and man-made radioactivity (2005)
  - From biogeochemical mineral elements in the ecosystem (2005, 2006).UENI NAS (Government funding).

#### Research programs and projects

1. Engineering studies of the complex in the Tavush region. Identify factors that contribute to enhancing the stability of landslide sites in the architectural complex. Engineering measures to prevent the activation of landslides and erosion, protection of territories and agricultural territory. (Order ARM/02/011 UN program - "Partnership in the implementation of development programs at the community level" - 2005. NICK Geo)
2. A joint partnership program of the South Caucasus (Commonwealth of Armenia, Azerbaijan, Georgia, Belgium, Norway, USA - 2005. Funding and support for the NATO / OSCE "Science for Peace) 2005. TSENI NAS.
3. Development of scientific and methodological basis of forecasting of dangerous hydrometeorological processes, provoked by the spring and autumn flood for example, river basin Aghstev in Tavush marz and development of activities to advance the protection of the population and territory. (PAS MES RA Ministry of Nature Protection) - 2010-2012. Organizational support and funding for the OSCE.

#### Study of economic effectiveness of DRR

Any program of research and evaluation of geo-ecological and economic security is ensured by economic and operational efficiency, which is evaluated by engineering protection of territories and objects in the area of hazardous processes. The project provides monitoring control of effectiveness.

**Context & Constraints:**

The absence of overriding responsible for planning, analysis, methodological and organizational activities, coordinating the full range of assessment and vulnerability of DRR.

Lack of information partnerships of monitoring of the various professional synergistically linked by the common purpose, provision of ecological and sociological public safety and reducing the vulnerability of areas and natural and man-made objects.

Significant negative role in the development of DRR is the lack of financial provision.

**Priority for action 3: Core indicator 4**

*Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.*

**Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Means of verification:**

- \* Do public education campaigns on DRR reach risk-prone communities? Yes
- \* Yes: Public education campaigns.
- \* Yes: Training of local government
- \* Yes: Availability of information on DRR practices at the community level

**Description:**

With taking into consideration that the strategy of informing the population about the risk of disasters and the ability to reduce exposure to hazards is a responsible, long-term and necessary task in the instruction of DRR, the level of progress can be assessed as some progress, but without a systematic strategic institutional commitment.

**Key issues and means of verification**

Public information companies exist, but their activity is not correlated on necessary level and depends on the actions of territorial administrations, simulating basically only occurring disaster of any scale.

Trainings of local authorities carried out regularly by special exercises for leading municipal authorities' actions with the involvement of the communities.

In particular, from 11 to 17 September in the country a multinational exercise on organizational mechanisms of action during emergency situations of natural and anthropogenic origin in the territories of Kotayk and Yerevan communities is planned.

Naturally, all activities aimed at improving the culture of adequate DRR activities.

**Context & Constraints:**

There is no centralized management for actions in the national structures system due to absence of national system of monitoring, analysis and early warning of population.

## Priority for action 4

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 4: Core indicator 1

*Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.*

#### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### **Means of verification:**

\* Is there a mechanism in place to protect and restore regulatory ecosystem services? (associated with wet lands, mangroves, forests etc) Yes

\* Yes: Protected areas legislation

\* Yes: Payment for ecosystem services (PES)

\* Yes: Integrated planning (for example coastal zone management)

\* Yes: Environmental impacts assessments (EIAs)

\* Yes: Climate change adaptation projects and programmes

#### **Description:**

Reduction of the major disaster risks associated with changing social, economic and environmental conditions related to geological endogenous and exogenous processes, changes in climatic and meteorological conditions and the development of sectors and situations - the consequences of disasters.

Consider the six prior "core indicators" to monitor and review progress and challenges in implementing the actions identified by HFA.

1. Disaster risk reduction - an integral part of the strategy and plans in the areas of: environmental, land use, strategic management of natural resources, the system preservation of natural ecological balance of the ecosystem, preservation of natural-technical system (NTS) to climate change and hydrometeorological conditions and the prevention of adverse changes in relief-and landscape conditions of the territory, contributing to the normal conditions of life of population and sustainable development of the NTS.

2. Programs and plans for social development aimed at reducing the vulnerability of most at-risk populations. Social development plans are in accordance with the socio-economic problems of emergencies and the procedure of liquidation of their consequences. The developments of the economy for sustainable functioning in emergency situations are compulsory, which are linked to the rational distribution of productive forces, a complex of measures aimed at security, livelihoods and life provision of population. Develop master plans for towns and cities, improving the reliability of municipal services, training systems and communications for the restoration of livelihoods, in case of violation under the influence of an emergency.

3. As part of the development of sectoral programs and plans aimed at reducing the vulnerability of economic activities, the following should be included:

- Development of scientific and methodological foundations of the establishment and functioning of

national forces for action in emergency situations

- Development of scientific and methodological foundations of economic analysis of safety regulation in natural and man-made spheres

- Advanced research in the field of protection of critical facilities and infrastructure from disaster.

4. Elements of disaster risk reduction should be included in the planning of settlements; however this factor is not always taken into consideration in Armenia. As the areas favorable for the construction are limited, it is common to use the areas at risk from the impacts of exogenous processes, subject to flooding as the residence areas. All these factors should be subjected to detailed studies in the planning of human settlements development and justified the construction of building area.

5. When planning the construction of spatial development at the stage of research and detailed design of infrastructures of cities and towns, in order to minimize the adverse natural and technological hazards, the implementation of engineering protection measures is recommended which reduce the vulnerability of reclaimed areas, as well as the reliability of each structure.

Level of progress

In general the level of progress can be estimated as:

Institutional commitment attained, but achievements are not complete and significant, but for some items "core indicators" assessment of progress consistent with the significant achievements of long-term commitment and capacity on the main level.

The mechanism of protection and recovery management

Yes, there are also realized by the legislative and institutional mechanisms for program management of ecological systems, particularly in relation to the flooded areas, areas under the development of mining, forests, etc.

Legislation on protected areas

There are protected areas, national parks and monuments under the protection of the state legislature in Armenia. In particular, the National Park "Lake Sevan", under the protection of the State today is in poor environmental condition. In connection with the water levels in Lake, the coastal areas are flooded, considerable funds are spent for the reconstruction of coastal inundation zone associated with the reconstruction and restoration of coastal infrastructure (eliminated illegal exploitation of the territory transferred to the design of communication are restored to treatment facilities, drainage structures are constructed to eliminate the negative impact on adjacent areas, etc.).

It should be noted that there is public concern about the placement of the mining industry in the area of Teghut Reserve.

Payment for Ecosystem Services

All protected areas in the sites and monuments of culture are potential areas of ecotourism. In particular, it should be noted the unique lake Parzlich (Tavush Marz), the territory's unique architectural monument of the V century - Tatev monastery, where a unique airlift with 4,5 km length is constructed. All the ecosystem services in eco-tourism zones are charged.

Integrated development planning and implementation of coastal management is associated mainly with the processing of rivers, lakes and artificial reservoirs from erosion, abrasion, impacts of flood debris, siltation and pollution of river beds, etc. In particular, there are developments of measures from recycling banks of river Aghstev in Ijevan city (Tavush Marz) from the mudflows in 1994 and 2002. Associated with the silting of the river bed and the flooding of large areas of the city. Coastal abrasion bowl reservoirs Dzhogaz (Tavush Marz), out of the operating mode of the main hydrotransportation channel in zone of Razdan city (Kotayk Marz), etc. According to the aforementioned hazards engineering stabilizing activities were developed.

## Environmental impact assessment (EIA)

The key reason for the assessment of environmental impacts is the development of mobilizing and prevention of environmental disaster that may arise in connection with the planned replacing of gold factory from Ararat marz to the area near Lake Sevan. The Government of the Republic of Armenia, in response to the concerns of the environmental community, has banned the project.

In this section the scientific and applied work of ARS of MES RA should be highlighted in partnership with JSC "Mining and Metallurgical Institute": "Mechanisms of environmental disaster risk reduction associated with the design, construction and operation of processing enterprises in Armenia ", 2010.

## Projects and programs of adapting to climate change

Developing approaches, forms and methods of scientific and regulatory program in the area of prevention, prevent and minimize the consequences of emergencies caused by today's threats, coupled with changes in climatic and meteorological conditions, is carried out in accordance with Armenia's participation in the international program of joint scientific research organizations of CIS member states to prevent and to liquidate the consequences of emergencies for the period up to 2011. (Paragraphs: 3.6., 3.1.2., 3.7.1.)

### **Context & Constraints:**

Despite of legislative base and institutional security, in some cases because of the need to replenish the economic potential and time benefits the natural balance of ecosystems is violated, creating a threat in some regions of the country.

An example is the violation of the ecology and cutting of valuable species plantations, loss of unique species of fauna and population movements due to the use of the territory of the reserve under Teghut for molybdenum developments, imprudent use of water under artesian water pond fish farms in the Ararat valley, leading to salinisation and desertification of fertile lands; planned energy program of extensive construction of small hydroelectric power stations, resulting in a breach of the Hyogo Protocol, to which Armenia joined. In this case, even the most strict compliance with all relevant norms and standards can not guarantee the inevitable in the construction of small hydropower violations of the flow of rivers. In fact, during the construction of ecology of rivers causes great damage, starts drying up of rivers and their transformation into banks in landfills, uncontrolled cutting of forest areas, etc.

### **Priority for action 4: Core indicator 2**

*Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.*

### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

### **Means of verification:**

- \* Do social safety nets exist to increase the resilience of risk prone households and communities? No
- \* No: Crop and property insurance
- \* No: Employment guarantee schemes
- \* Yes: Conditional cash transfers
- \* Yes: DRR aligned poverty reduction, welfare policy and programmes
- \* No: Microfinance

\* No: Micro insurance

### **Description:**

Programs and plans for social development aimed at reducing the vulnerability of most at-risk populations are being implemented in the areas of:

food security;-  
public health;-  
critical infrastructure- protection;  
environmental strategy- aimed at reducing vulnerability and risk areas of residence and social conditions of life.

Results Achieved

#### a) Food security

In the republic there are expert services in the area of food safety, agricultural and livestock production, organizing regular screening the aforesaid goods.

In recent years, poisoning of certain segments of the population by locally made products is often recorded. Reported events are analyzed and respective manufacturers are punished to avoid similar violations of standards.

Special mention should be done on the production of environmentally pure products. It is noted the widespread use of imported seed to the detriment of native seed. Because of the difficulty of holding and conditions of transportation (foreign seeds and products are favorably differ) people have to use the technical grades of tomatoes, cucumbers, potatoes, which affects the health of the poor part of population.

#### b) Public health

There are certain achievements in the field of public health and social policy. Ongoing economic regulation of price increases due to social benefits and pensions. Outpatient clinics provide Disabled Groups 2 and 3 next to free medicines and 50% discount, expensive, through specialized pharmacies. If necessary, surgery, hospitals receive subsidy payments.

#### c) Protection of critical infrastructures

Considerable attention is paid to protecting the functioning of life support and communications activity. Government and investors allocate significant funds to reduce the vulnerability of transport, water-bearing and power communications.

#### d) Environmental strategy aimed at reducing vulnerability and risk areas of residence and social conditions of life

Particularly it is should be noted the economic strategy for reducing the vulnerability of areas and objects of residence. There have been cases of government social payments for damages resulting from exposure to hazardous natural processes of the building in Yerevan, Kotayk, Tavush, Lori marz, providing resettlement of the population in a favorable place of residence.

Level of progress

Some progress, but without a systematic strategic institutional commitment to recognize the limits of capacity and resources.

Key issues and means of verification

The social security system to enhance the stability of homes and villages is poor. There is no crop insurance and property from any natural hazards. State cash payments to victims are usually not appropriate to nominal damages. Mechanisms to ensure employment opportunities are not available, though (during the last 3 years) services of expert assessment operate.

### **Context & Constraints:**

There is no institution of state insurance of DRR. Mechanisms for compulsory insurance against any

hazards are not developed.

### **Priority for action 4: Core indicator 3**

*Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities*

#### **Level of Progress achieved:**

2: Some progress, but without systematic policy and/ or institutional commitment

#### **Means of verification:**

- \* Are the costs and benefits of DRR incorporated into the planning of public investment? Yes
- \* Yes: National and sectoral public investment systems incorporating DRR.
- \* Yes: Investments in retrofitting infrastructures including schools and hospitals

#### **Description:**

Economic and production sector programs and plans for reducing the vulnerability of national economic and social activities are realized by single procedure, mostly in the construction sector, partly agricultural and medical care.

Level of progress on self-evaluation can be assessed as a minor with some signs of activity in the direction of institutional commitment.

#### Key issues and means of verification

The tasks of DRR economic efficiency are reflected in government planning of investment support. Investment partner participation provided for in the reconstruction, rehabilitation of infrastructure, mainly in transportation communications and improve the reliability of earthquake resistance of structures and units of school buildings and hospitals.

Of the rare (for investment promotion), it should be noted the study to refine the inventory of landslide phenomena on the territory of Armenia.

Description of contextual reasons for assessing countries at confirmed level

Developed targeted national programs in research DRR partially (if possible) can be realized by state budget expense by ministries and agencies.

Such applied researches include:

1. "Program evaluation of a possible state of transport and other communications of life support, in the case of the devastating earthquake in the republic, taking into account synergy of secondary natural and man-made processes, PAS, NSSP MOE RA, 2003.
2. "Evaluation of landslide activation process on the railway track Ijevan-Razdan Haghartsin at the station, with the development of engineering and protective measures," "Arminzhproekt, 1993 1994
3. "Program evaluation of anthropogenic factors and abrupt changes in negative activation of meteorological conditions on the change of parameters debris flows and spring floods, amplifying their devastating impact on socio-economic structure of Armenia", JSC "IVPiG, 2005 2007

Description of the contextual assessment of the causes at the specified level

Listed programs after the planned researches almost reached the final phase - the implementation of engineering countermeasures and evaluation of its economic efficiency.

#### **Context & Constraints:**

Key contextual issues in the work of national institutions and partner organizations are in the long periodicity phase of financing the planned program of research and studies, and significant breaks in the

implementation of the work that alters the original characteristics of hazardous processes and disturbance regimes of technological engineering protection of territories and objects. In particular, as a result of long-term (2004-2006) studies to assess landslide hazard and risk assessment of the manifestations of different genesis and activity in the territory of Armenia, a team in partnership between the research team JICA - Japan, the Ministry of Urban Development and "Georisk" was determined cadastral valuation of risks and enhance the landslides. It has been carried out the development of mechanisms of control and monitoring of engineering measures for stabilization. 132 of 2,500 most dangerous sites were defined, the risk of activation of which can lead to more damage, which required an immediate assessment of the organization of monitoring of their activity and studies on the development of stabilizing activities of engineering protection. Ministry of Urban Development has developed a plan for implementation of research (2-3 landslide sites in the year) in 2007. However, to this day due to lack of funding the planned research is not realized.

#### **Priority for action 4: Core indicator 4**

*Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.*

#### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### **Means of verification:**

- \* Is there investment to reduce the risk of vulnerable urban settlements? Yes
- \* Yes: Investment in drainage infrastructure in flood prone areas
- \* Yes: Slope stabilisation in landslide prone areas
- \* Yes: Training of masons on safe construction technology
- \* Yes: Provision of safe land for low income households and communities

#### **Description:**

Practically, after the Spitak earthquake in 1988, 80% of cities and towns of the republic gained new master plans of development. Each master plan included plans for land use, conducted inventory valuation and zoning on the degree of hazard and risk assessment of building, economic and social development. Each master plan provided a scheme of engineering protection of the built and the planned development of territories, taking into account the geodynamic and seismic conditions.

Key issues and means of verification for reducing the risk of urban areas

1 Significant investments are done by Government in the areas at risk of inundation (flooding) on the high waters and floods.

In particular, in the northern regions of the country (Aragatsotn, Shirak, Lori, Tavush region), where in the last decade, due to adverse changes in meteorological conditions, flooding of large territories is recorded.

Monitoring controls of risk assessment of possible flooding in potentially hazardous areas are organized. Arrangements are made in advance to strengthen the river banks and clearing channels and channels of water-transportation systems. The possibility of regulating reservoirs, the state of stability and reliability of spillway structures, including drainage systems are evaluated.

It is necessary to note the investment support of national and foreign partners of joint research on risk assessment and engineering measures to stabilize the process of flooding of populated areas and



territories swamping of Ararat marz.

Due to the significant rise of ground water level, flooding and drainage strain 176 settlements of 227 were flooded, making the life of population difficult and damaging large territories of agriculture. Swamping created a threat of malaria, a number of diseases of the population. It should be noted that the risks of flooding and inundation areas of the Republic is often directly related to the uncorrected and exit the operation of drainage and water-transportation structures (canals and pipes). In addition to the significant loss of strategically important volumes of water, thus the water-leak causes flooding and underflooding, the wet soil areas and enhancing synergies dangerous exogenous processes (landslides, erosion, debris flows), leading to desertification in and out of agricultural use of large areas and is fraught with social and economic risks.

## 2 Slope stabilization in areas prone to landslide risk

Thanks to the work of the Ministry of Urban Development, in partnership with NEC, "geo" and the Japanese research group, Yusa, (2004-2006.), which was noted earlier, inventory estimate of landslide local sites was held (2500 sites), with recommendations for monitoring and control engineering protection and prevent dangerous to activate them. National Research Group ("Georisk", "Geocom" PAS MOE RA, private companies, Inzhproekt, ArmNIIIZS Ministry of Urban Development), using national and international experience leading a risk assessment of landslides on the revitalization of local areas, with development of engineering protection measures, positive-valued independent examination. Experts, the above institutional arrangements, through collaboration often holds a commission survey, giving an expert evaluation of slope stability, erosion of material accumulation and the factors contributing to the revitalization.

## 3. Training Builders on technologies of safe construction

According to the above-mentioned International Program for the joint research organizations of CIS countries on prevention and emergency response for the period up to 2015 national institutional organizations of the Program developed a number of innovative and investment programs and projects in the assessment of the existing building stock and new construction in the aspect of the most reliable foundation.

- "Development of national innovation and investment projects and programs for solving problems of quality construction and prevent their deformation in a refined seismic activity in the republic" - the Ministry of Urban Development, IGN NAS, SNCO NSSP RA MOE, "Georisk" (paragraph 2.3 of the Program 2005 - 2011).

In 1994 and 1997. in the republic SNIP II 2.02 94 to earthquake engineering was developed and published, it was distributed to meet the standards for design and construction of a new seismic conditions, available for each design and construction organizations.

During 2005-2007, Ministry of Urban Development implemented a Programme project to assess the impact of natural and man-made disaster on the activities of urban and safety certification (paragraph 2.5.4 of International Programs - 2007), which held improvement of Methodical instructions "Investigation of the technical condition of residential and public buildings ", " Certification of buildings and structures - the security certificate" and "Regulations on the studies of industrial buildings and facilities, including engineering protection from the manifestation of dangerous natural and man-made processes".

POAK MOE NSSP RA in their daily activities shall assess the dynamic characteristics of buildings and their seismic resistance. As a result of these studies recommendations were presented to improve service reliability by strengthening structures (program item 2.5.3).

In each of the construction companies service of expert assessment of quality of construction operates, each project is thoroughly examined. A supervision of the erecting structures is conducted. Any violation of the design is evaluated by the building inspection and independent examination.

Training of the builders on innovative methods of safe construction of buildings and structures is carried out by technical units of the relevant ministries and agencies.

4 Monitoring the provision of safe land to any groups, implemented by the state inventory position to detailed information on the quality characteristics, allocated for the construction of development sites, and local - municipal services, provincial chief architect, according to master plans.

**Context & Constraints:**

One of the common problems arising in the resettlement of victims of natural and man-made processes, living in dangerous or deformed buildings is insufficient and inadequate government payments for new safe areas. Allocated funds are barely enough for superficial improvements, but it does not solve the problem of safety provision.

**Priority for action 4: Core indicator 5**

*Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes*

**Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Means of verification:**

- \* Do post-disaster recovery programmes explicitly incorporate and budget for DRR? Yes
- \* 17 % of recovery and reconstruction funds assigned to DRR
- \* Yes: Measures taken to address gender based issues in recovery

**Description:**

Yes, there are recovery and rehabilitation program for the DRR, 17% of budget expenditures.

National target programs on rehabilitation of the disaster zones are functioning.

It should be noted that the major dams for irrigation purposes in Kotayk marz are reconsted.

The position of the restoration and strengthening of buildings is involving in the annual budget of the republic.

Major expenditures for reconstruction essential for the purposes of reclamation dams and reservoirs, with an estimated value 1800 mln. AMD are considered, bringing its tonnage to 60000 million m3 of water, that would solve a number of socio-economic problems.

**Context & Constraints:**

Isolation of planned major expenditures, calculated on staged financing, which is often delayed.

Recovery program of the disaster zone by the devastating earthquake inexplicably delayed, although there are some prevalence and progress in its implementation. For some other reason reconstruction of the dam reservoir Marmarik is delayed associated with difficulties in the packing of clay soils in the core of the dam. The reasons are of technological and geotechnical character

**Priority for action 4: Core indicator 6**

*Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.*

**Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Means of verification:**

- \* Are the impacts of major development projects on disaster risk assessed? Yes
- \* Yes: Assessments of impact of projects such as dams, irrigation schemes, highways, mining, tourist

developments etc on disaster risk

\* Yes: Impacts of disaster risk taken account in Environment Impact Assessment (EIA)

### **Description:**

In the republic there are structures initiating the mainstreaming of disaster risk reduction into national development plans and programs for sustainable development in strategically important areas of economics and management such as: social and domestic, energy, agriculture, medicine, infrastructure and environment. As a basis the following motto is considered: Development should not cause new disasters.

Yes, the impact assessment of major development projects on risk reduction is carried out, but with varying completeness and limitations in capacity and resources.

The practice of assessing the impact on the risk of disasters in the last decade shows that the impact of major projects linked to the most dangerous and frequent natural and man-made processes, as well as synergistically secondary processes, and potentially vulnerable to their technical systems.

It is necessary to define the following major strategic directions of impact assessment on risk reduction:

1. Establish procedures for adopting measures to eliminate the consequences of accidents on the waterworks and the compensation of possible damage. Formulation of recommendations of the legal, technical, and institutional regulation in the area of prevention, prevention and mitigation (International Programme of the CIS countries, paragraph 3.1.1. The Committee of Water Resources, RA, 2005-2006)..

2. Evaluation of design features, condition, stability and operational safety of dams and reservoirs landfall. Recommendations to restore some of the most dangerous elements of dams, the degree of abrasion of the coast, the risk assessment of a possible breakthrough, and the danger of flooding in 56 most bulk reservoirs of RA. Development of measures for signaling and early warning of people about possible dangers.

The project is implemented under the advisory and financial support from the research company of the UK Hydroproject JSC, Giprovodhoz "NICK" Drainage ", PAS MOE RA, the Committee of Water Resources of the Republic of Armenia, 2003-2005.

3. Local Projects: a) the restoration of sustainable bottom culvert dam reservoir Karnutskogo Shirak marz, Office programs SCWS Ministry of Territorial Administration, Inc. Hydroproject, ArmNIISiZS, 2006 b) Evaluation of the stability of the landfall reservoir "Dzhogas in Tavush RA from the image of the coastal slopes and landslides - JSC Giprovodhoz "ArmNIISiZS, "Monitoring" of the Ministry of Nature Protection, SSA MOE RA, 2006, c) Rehabilitation and reconstruction of the dam reservoir "Marmarik, an important project for the irrigation of Kotayk marz - TIG Armenia, Ltd. Hydroproject, State Water Committee MTU RA, PAS MES RA with an estimate of the problems lay ground, landslides and landfalls in the reservoir and the measures to prevent possible breakthrough and advance warning of the population.

### **II Irrigation Systems**

Serious threat to the system of irrigation and water-transport sites and installations are of natural and man-made factors (processes) and anthropogenic activities. As examples:

1. Development projects of fisheries in Ararat marz. To date in the region there are over 80 ponds for fish breeding farms, which cater to the consumption of substantial reserves of groundwater and artesian water in the region, violating the natural water balance of strategic stocks and an irrigation regime of agricultural crops and pasture.

2. Malfunctioning of irrigation canals and drainage systems considerably damages the areas prone to alkaline. Overflowing water canals, leaks from damaged fixtures leads to disruption of the irrigation regime, as well as to swamping of large areas, flooding homes and villages, intensify malaria.

In 2002-2003 "Drainage" scientific commission of RA Ministry of Agriculture has developed and implemented measures to restore 82% of irrigation and drainage communications systems of the Ararat region, which greatly reduced the risk of desertification and salinization of areas.

The irrigation systems in Aragatsotn, Tavush, Kotayk, Syunik regions are in difficult conditions (for the reasons mentioned above). Complex stress-strain state, the seepage losses of water along the route (mines 8 and 10) tunnel diversion of waters of the Arpa River into Lake Sevan leads to a significant loss of water and swamping of areas adjacent to the zone of the channel.

Due to state funding monitoring studies are carried out along hydro-technical tunnel highway, measures to heal the strained construction sites are developed.

### III Transport communications, highways, railway tracks

Vulnerabilities and operational reliability of transport communications of the Republic is disrupted and complicated (mostly) by activation of exogenous natural phenomena. Below are examples of domestic exposure to the risk of disasters caused by natural and manmade factors complicating the reliability of transport communications:

1. Software project evaluating the reliability of transport links with the manifestation of geodynamic and seismic activity and synergistically related to natural processes. Recommendations for prevention, rehabilitation, temporary use of duplicate transport lines (PAS and NSSP RA MOE, 2002).
2. Draft assessment of possible violations of operation of the railway tracks Yerevan-Tbilisi, depending on the stress-strain state anti-mudflow galleries and roadway on the 237 km due to the activation of landslides on the slope (PAS MOE RA, AO Arminzhproekt, 2003).
3. The above-mentioned project impact assessment of landslide damage the integrity of a strategic railway route Ijevan-Razdan near Haghartsin village have the same name and the bypass road around Haghartsin, the risk of damming the river (PAS MOE RA, JSC Arminzhproekt, IGS NAS, 2002 and 2003 .).

Activation of the landslide began in 1991.

4. The draft risk assessment of landslide and subsidence of manifestations of the roadway Yerevan-Lori at 182 km with recommendations for recovery and stabilization of landslides (Ministry of Urban Development, PAS MES RA 2010).

### IV. Objects of the mining industry

The impact of major projects in mining is connected with disaster risk stability and reliability of tail dams, accident-free work surface and underground drainage facilities, as well as the stability of open pit mining.

Assessing the impact on risk reduction efficiency projects and open pit development (career) development of the deposits are the prerogative of Mining and Metallurgical Institute, in partnership with ARS MES RA.

Assessing the impact on risk reduction projects in developing facilities mining industry is reflected in the following studies:

1. Parameter estimation for the safe operation of mining facilities of Armenia (State Design and Research and the Research Institute of Armenia, 2002).
2. Assessment of the environmental safety of operating and abandoned tailings Armenia (OJSC "Mining and Metallurgical Institute, 2008).
3. Mechanisms to reduce the risk of environmental disaster associated with the design, construction and operation of mining and processing enterprises (PAS MES RA 2009).

### V. Assessing the impact on disaster risk of tourism infrastructures

Assessing the impact on disaster risks on the development of tourism infrastructures mainly linked to the manifestation of landslide and, in part, mudflows, as evidenced by the example below.

Armenia is called "open-air museum", which is associated with 18 protection zones of nature reserves and national parks and numerous unique monuments of the Middle Ages. In addition to careless attitude of the population and, in part, of state allowing the use of protected areas under the construction, development of domestic objects and entertainment destination, often under development are assigned territories which are certainly dangerous in the manifestation of natural processes:

1. Engineering studies on the territory of the monastery complex "Makaravan in Tavush region in the landslide area, with research to assess risk factors for activation of landslides and erosion, development of mechanisms for monitoring control and engineering of protective measures to stabilize the landslide and the restoration of the tourist complex (Program Project AR (02 - 11) UN Programme on Partnerships

in the implementation of development programs at the community level, "NEC" geo ", 2003-2009.).

2. Seismicity and archaeology in the case of Armenia (Financial support for international scientific cooperation PYCS France, NICK "geo", 2003-2005).

3. Risk assessment of activation of landslides in the area of construction of cableway unique length of 4,5 km from the two terminals and trim the intermediate supports. The construction is being built in an ancient landslide area. Geological, geomorphological and geotechnical studies revealed risks of landslides intensification. Expertise exhibited requirements for the implementation of pre-engineering protection to reduce operational risk.

Disaster risk is taken into account in assessing the environmental impact assessment (EIA).

In this position of the section the following should be noted:

1. improvement of techniques of integrated risk assessment of:

- Heavy metals in urban areas;

- Natural and man-made radioactivity in Ararat Valley;

- Biogeochemical flow of dangerous elements in the ecosystem (MP organizations of CIS countries, paragraph 3.1.1., TSENI NAS, 2005-2006).

The aforesaid position includes the assessment of pollution in urban areas of the republic, its zoning on the degree of contamination, selection factors and populations at risk, mapping in M 1:10000 criteria for the sustainability of ecosystems to anthropogenic factors, methodology of early diagnosis of desertification processes, impact assessment of mining enterprises on the environment and technology of antifiltration barriers at tailings.

2. Methodical instructions on calculation of pollution in case of accidents on chemically hazardous objects.

Development of a technique of automated calculation of the degree of contamination of territory by chemically dangerous objects.

Assessment of risk of possible accidents at chemically dangerous objects, measures to reduce it and protect the population at risk. Safety data sheets to include the mechanisms to prevent emergencies (MP organizations of CIS countries, PAS MOE RA, 2005-2006).

3. Organization structure and methodological support of the Center for Monitoring SNLK involving relevant agencies of ministries, departments and research institutes of RA (inter-governmental organizations of CIS countries, ARS MES RA).

### **Context & Constraints:**

Conceptual problems of national and cooperative structures are conditioned with lack of comprehensive risk assessment program and priorities in developing projects and programs for disaster prevention, ensuring the development of the state in socio-economic terms, while providing a stable environment.

## Priority for action 5

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 5: Core indicator 1

*Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.*

#### Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### Means of verification:

\* Are there national programmes or policies to make schools and health facilities safe in emergencies?

Yes

\* Yes: Policies and programmes for school and hospital safety

\* Yes: Training and mock drills in school and hospitals for emergency preparedness

#### Description:

Strengthening of disaster preparedness creates the preconditions for an effective response, reducing the impact and losses. Readiness at all levels: governments, municipal authorities and the population through teaching, training and regular monitoring of society commitment to mechanisms for disaster risk management - is a key to a successful counteraction and behavior in emergencies.

Particular attention is paid to the procedures required to inform the threat of disaster and a review of studies of similar domestic and foreign disasters.

In accordance with the priority of the actions of the HFA, we note the level of progress which really reflects the extent and nature of the state of Armenia on the main indicators and priorities for action.

#### Key issues

1. Safety assessment of schools and hospitals is in place, but on demand of managements of individual institutions on supposed strains. These may be classified as single cases: the school N132 in Yerevan - ArmNIISiZS0 2001; separate hospital building after Mikaelyan in Yerevan - ArmNIISiZS0 2001; a number of schools and hospitals in cities Gyumri and Vanadzor - POAK Nssp MOE RA - 2002-2004. A software project is under development (Sweden) to assess the seismic vulnerability of hospitals and schools of Yerevan for 2011-2012.

2. Education and training in the preparation of disaster preparedness

It should be noted lectures and training activities included in the curriculum of schools of Yerevan and Gyumri under the auspices of the RA Ministry of Emergency Situations. A special cognitive literature is published for kids, which is distributed in schools by Crisis Management State Academy of MES RA. Hospitals are provided with visual aids - posters about the rules of behavior in emergency situations.

#### Context & Constraints:

It is considered unacceptable to explain the difficulties in the indicator N 1 only by the lack of funds.

There is a need to focus on the priority of a mandatory responsibility to society at any level and distributing these functions under the responsibility of the relevant ministries: urban planning, education and health.

### Priority for action 5: Core indicator 2

*Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes.*

**Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Means of verification:**

- \* Are the contingency plans, procedures and resources in place to deal with a major disaster? Yes
- \* Yes: Contingency plans with gender sensitivities
- \* Yes: Operations and communications centre
- \* Yes: Search and rescue teams
- \* No: Stockpiles of relief supplies
- \* No: Shelters
- \* Yes: Secure medical facilities
- \* No: Dedicated provision for women in relief, shelter and emergency medical facilities

**Description:**

Plans for disaster preparedness at all levels operate, staff and command exercises are regularly conducted in the MES of RA with participation of the regional emergency departments and self-governmental bodies and involvement of the population with working out disaster response skills included in the annual plans of MES, with working out factors and actions to reduce disaster risks.

Key issues and means of verification

Yes, there are plans to simulate the procedural and resource use in the most dangerous and most major disasters, including devastating earthquakes, dam failures and flooding of territories, accidents at nuclear and chemically hazardous facilities, major landslide displacements of seismic and gravitational origin.

In the process of teaching and analysis of local and foreign experience, skills to act quickly in emergencies were developed and improved for communications centers, intelligence, search and rescue teams, public health groups, first aid, hiking hospitals, humanitarian life support, etc.

**Context & Constraints:**

Humanitarian support resource and the respective positions of livelihood for the location of victims and providing them with temporary shelter are worked out insufficiently.

**Priority for action 5: Core indicator 3**

*Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.*

**Level of Progress achieved:**

2: Some progress, but without systematic policy and/ or institutional commitment

**Means of verification:**

\* Are financial arrangements in place to deal with major disaster? Yes

\* No: National contingency funds

\* No: Catastrophe insurance facilities

\* No: Catastrophe bonds

**Description:**

There is no doubt that the timely provision of resources for early action to restore and maintain the livelihood of the affected population for full recovery after a disaster plays an important role. Mechanisms of accumulation and targeted use of reserves are worked out insufficiently.

Key issues and means of verification

Yes, there are some (specific) schemes for realizing the use of reserves in case of major disasters due to minor reserve funds to deal with emergency situations and liquidation of their consequences. At the same time, lack of resources determines the absence of forms and insurance mechanisms. Formation of recovery in an emergency is made from the reserve fund budget. Formation of special funds is in embryonic state. Mechanisms for the accumulation of funds under the bond assistance from the public on disaster situations are not developed yet.

**Context & Constraints:**

Lack of institutional organizations in the private and the problem of insurance in the event of disasters.

**Priority for action 5: Core indicator 4**

*Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews*

**Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Means of verification:**

\* Has an agreed method and procedure been adopted to assess damage, loss and needs when disasters occur? Yes

\* Yes: Damage and loss assessment methodologies and capacities available

\* Yes: Post disaster need assessment methodologies

\* Yes: Post disaster needs assessment methodologies include guidance on gender aspects

\* Yes: Identified and trained human resources

**Description:**

There is no doubt that the development of mechanisms for information exchange on the situation of threats and forecast disasters and review changes in the environment after the disaster is of utmost importance for the structural organization of action to prevent and minimize the effects of analog



emergencies.

Definitely, disaster preparedness, and recovery planning and response should be based on applying the lessons of past disasters.

Key issues and means of verification

Yes, methods and procedures for evaluating losses, damages and needs in disasters are adopted. A news on the basis of modern scientific and technical technology software and widely known to the scientific and technical community to the lessons of major disasters, tools to prevent and avoid dangerous impacts on the level of national and foreign experience are evaluated.

In particular, scientific and practical publications are published: monographs, manuals and guidelines for assessing the impact of major emergencies from the manifestation of natural and man-made processes that contain the tasks of modeling of mechanisms of hazardous processes, monitoring and prediction of their expression, solving problems of engineering protection of the population and territory and quantify risks.

Together with the regional offices of state administration it is determined to train troops, who receive their education through courses at Crisis Management State Academy of MES RA.

### **Context & Constraints:**

The decision of the ARS Management of MES RA approved standards meet the needs in emergencies, necessary to implement the formation of reserve funds.

At Crisis Management State Academy of MES RA, providing potential training in the European two-step level (bachelor, master), we need a scientific council for the preparation of high management staff, the strengthening of the teaching staff to include the functions of the Council of Scientific and methodological developments in planning and raising the foundations of risk management disaster to date, in accordance with international standards.

## Drivers of Progress

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### a) Multi-hazard integrated approach to disaster risk reduction and development

#### Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

#### Do studies/ reports/ atlases on multi-hazard analyses exist in the country/ for the sub region?:

-- not complete --

#### Description (Please provide evidence of where, how and who):

Factors acting as catalysts - the main actors in achieving the state made some progress in reducing the risk and restore the disaster area rather differ significantly in the national and municipal contexts. At the same time, uniquely, plans and strategies, country programs are distributed, evenly with emerging of resources.

A number of factors that contribute to capacity building in risk reduction and recovery is outlined below:

1. The development of innovation and investment of national programs for complex tasks prevention and management of emergencies (Interstate program of joint scientific research organizations in the CIS (the MT organizations CIS), Ministry of Urban Development, "Georisk", IGN, NAS RA TSENI NAS, 2005-2010.).

2. Development Project for the International Research Center "Garni" status and the complex tasks of research risks in the area of Earth Sciences (Project funded by the ISTC - 2005, IP organizations of the CIS, IGS NAS, "Georisk").

3. Development of scientific and applied bases of quantitative probabilistic-deterministic prediction of extreme complex scenarios of dangerous natural and man-made processes on the basis of a new generation of methods for evaluating the complex risks and negative social, economic and environmental impacts, reflecting the synergies and naturally-random development of these processes (MP organizations of CIS countries, PAS MES RA AOZT IVPiG RA, 2009-2010.)

Safety of the public areas and communities achieved the majority of studies of the conceptual reasons for conformity assessment of each of the factors on the high level required by the APA. Here is as an example the following researches could be included:

- Risk assessment and risk of occurrence of dangerous natural and man-made processes to the territory of Kotayk region. Mapping M 1:50000 and 1:25000 with zoning on the degree of hazard (PAS MOE RA, due to budget financing, 2008).

- Projects of similar studies in areas of Tavush, Lori and Ararat regions of Armenia ("Geocom" Society International Red Cross, ARS of MES RA, financed by the Armenian branch of the United Nations, 2009).

The level of compliance

Partial compliance with the full recognition and understanding of issues and actions emerging strategic directions are proved by mentioned examples.

Reducing risk of exogenous processes. Adapting to new settlements conditions in the light of global changes (the infrastructure of cities and towns).

Research, projects, programs, and implementation and related issues additions associated with the necessity of the planned scientific and applied research that focused on achieving progress.

The strategic plan should reflect the following studies:

a) Completion of research to assess the hazards and risks in the region of Armenia: Aragatsotn, Armavir, Shirak, Syunik and Yerevan for the implementation of planned activities for the development of the atlas security in the republic with the development of multiscale electronic maps of zoning on the degree of hazard and risk.

b) Development Program for Risk Assessment manifestations of inundation (flooding) on the rapidly

changing and adverse meteorological conditions over the basin rivers (15 pools), to which considerable resources and attracting investment funding are needed.

As an example may be cited the draft program on the risk assessment of flooding of the basin river Aghstev and its tributaries, presented by ARS of MES RA and approved for funding by the OSCE. It is assumed that experience in assessing flood risk, inherent in that project may be expanded in the future in all the remaining pool of the country.

The partnership to strengthen security of the population involved a number of NGOs, as well as private companies and public territorial groups.

## **b) Gender perspectives on risk reduction and recovery adopted and institutionalized**

### **Levels of Reliance:**

No/ little reliance: no acknowledgement of the issue in policy or practice; or, there is some acknowledgement but nothing/ little done to address it

### **Description (Please provide evidence of where, how and who):**

Status of Gender in actions is equal to zero and according to the requirements of HFA can be uniquely rated by position N1.

## **c) Capacities for risk reduction and recovery identified and strengthened**

### **Levels of Reliance:**

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

### **Description (Please provide evidence of where, how and who):**

Central strategy for disaster risk reduction - involving public areas and communities of the municipal units to moderate involvement in learning and readiness for successful participation in risk management through the active involvement of the ARS of MES RA (business and educational) in actions to reduce the risk of any manifestation in the field. Each of the regional offices is guided by annual plans agreed and approved by the ARS of MES RA. Heads of territorial offices of the ARS of MES RA, as assistants to provincial governors on security issues have the capacity to discuss and share problems with the regional commissions, community leaders, and industrial facilities of the region.

The annual plans of ARS MES RA celebrated work on joint command-staff and tabletop exercises, involving the strengthening of people's ability to reduce risk.

Level of consistency in the implementation of the HFA, in accordance with the provisions of sections rated as "substantial and continuing correspondence: much of the ongoing actions to perform in accordance with the strategy."

## **d) Human security and social equity approaches integrated into disaster risk reduction and recovery activities**

### **Levels of Reliance:**

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

### **Description (Please provide evidence of where, how and who):**

The practice of risk reduction in Armenia confirms the fact that protecting the most vulnerable populations from emerging environmental risk factors is complex and elusive task.

Level of consistency in the implementation of the HFA in accordance with the section under consideration can be estimated as: "Some correspondence full recognition of the existence of the problem; action is taken in the range of policies and practices, the full participation of key stakeholders

has been reached."

It is worth repeating the need for an Insurance Institute of Public and Private (personal) on social and environmental risks. Check the status of housing and real estate even in Yerevan is limited with compilation of acts of non-residence in life-threatening conditions. Hopelessness of the situation is explained by lack of funds and housing for the resettlement of needy families.

### **e) Engagement and partnerships with non-governmental actors; civil society, private sector, amongst others, have been fostered at all levels**

#### **Levels of Reliance:**

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

#### **Description (Please provide evidence of where, how and who):**

In various institutional organizations, on their orientation a large bank of knowledge is collected that should be integrated and be made available to the consumer.

Investments are needed for collecting, processing, refining and establishing a data bank and database to facilitate the use of these materials and to replenish them as they gain new information.

Because of number of objective and subjective reasons, the implementation of the necessary studies are carried out on non-sufficient level, the implementation of program activities on DRR in many cases is carried over a longer period, mainly due to lack of funds.

The presence of scientific and technological capacity should be noted.

### **f) Contextual Drivers of Progress**

#### **Levels of Reliance:**

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

#### **Description (Please provide evidence of where, how and who):**

Surveys, implementation of programming activities and monitor of disaster potential sources of natural and manmade character are conducted.

In the coming years additional efforts will be needed to implement comprehensive measures aimed at reducing risk and seismic landslide processes.

# Future outlook

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## Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

### **Overall Challenges:**

Formation of a platform for DRR at national level. Involving a wide range of public, community organizations and private entrepreneurs

### **Future Outlook Statement:**

Establishment and strengthening of DRR fund.  
The establishment of the insurance institute for disasters.  
Attracting foreign investors in the insurance system.

## Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

### **Overall Challenges:**

Bring the programs and projects of DRR to the public.  
Formation of the institute of involving people in DRR problems.

### **Future Outlook Statement:**

Teaching a wide range of public methods and techniques for DRR.

## Area 3

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

### **Overall Challenges:**

Based on monitoring data to develop and implement programs for preparedness, response in emergencies, as well as response, recovery of the affected areas and facilities.

### **Future Outlook Statement:**

1. Increased preparedness of emergency response.
2. Planning and implementation of DRR activities
3. Improving the monitoring system in Armenia in case of emergencies for DRR.
4. Increased interagency cooperation for DRR.

# Stakeholders

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## Departments/organizations that have contributed to the report

- \* Armenian Rescue Service (ARS) of MES (Gov) - Director, Major-General S. Azaryan
- \* Armenian Rescue Service (ARS) of MES (Gov) - Press Secretary, Colonel N. Grigoryan
- \* Population and Territories Protection Departm.ARS (Gov) - Chief, Colonel H. Yemishyan
- \* RA Ministry of Urban Development (Gov)
- \* RA Ministry of Nature Protection (Gov)
- \* RA Ministry of Agriculture (Gov)
- \* RA Ministry of Economy (Gov)
- \* RA Ministry of Territorial Administration (Gov)
- \* RA Ministry of Education and Science (Gov)
- \* RA National Academy of Sciences (Acad & Research)
- \* RA Ministry of Healthcare (Gov)
- \* RA Ministry of Labor and Social Affairs (Gov)