PROJECT TERMINAL REPORT

Basic Project Information Project number: Project title:

Designated Institution (Executing Agency):

Project starting date: Originally Planned: Actual:

Project completion date:
Originally planned:
New:

Total budget planned:
Original:
Latest signed version:

ARM/99/002

Sustainable Emergency Management and Communication Network (Disaster Management)

Emergency Management Administration under the Government of Armenia

December 1998 February 1999

December 2001 December 2000

US$ 1.747.120 US$ 221,774

Period covered by the report: February 1999 - December 1999

20.04.2000

PART I. Numerical Rating

Following the UNDP regulation this report is introduced in a specific format comprising three sections represented by Numerical Rating, Textual Assessment and a Summary Table on the project progress in achieving the expected results. This section provides a numerical rating of the project relevance and performance emphasizing the substantive focuses enlisted, based on the scale below:

1-Highly satisfactory 4-Unsatisfactory 2-Satisfactory X-Not applicable 3-Unsatisfactory, with some positive elements

SUBSTANTIVE FOCUS	Target group(s)	Project manager	Government	UNDP
A. RLLLVANCL				
1. How relevant is the project to the development priorities of the country?		l		
I How relevant is the project to the promonan of sustainable human development^ Indicate your rating on the thematic focus which *the project* was designed to address. i a) Poverty eradication and sustainable livelihoods (b) Protection and regeneration of the environment (c) Gender in development (d) Promoting an enabling environment for SHD, including governance		1		
3. To what extent are appropriate beneficiary groups being targeted by the protect. based on the following considerations' (a) Gender (b) Socio-economic factor (c) Geographic location		1 1 1		
4 Given the objectives of the project, are the appropriate institutions being				I

B. PERFORMANCE

1 Using the following indicators rate the contribution of the outttuts to the achievement of the immediate objectives:

Immediate Objective I. To decrease the vulnerabilirs of population front natural and technological hazards and **resulting disasters.**

Outputs for Immediate *Objective* 1.

1.1. Output 1.1. Improved prediction of technological **hazards and** local natural hazards up to 75% of all occurring disasters.

1.1.1.Physical renovation of the existing hazard monitoring
system on the basis of NSSP
national multi parameter observation network.

1.1.2. Physical renovation of the existing system of data acquisition and analysis.

1.1.3. Physical renovation of communication network and purchase of equipment when necessary.

1.1.4. Update of the established database on different hazards and disasters.

! .1.5. Evaluation of disasters occurred within last ten years ii Lrcis=' if, identil•: the *i1fl* iLc; bctween ria2_ira precursors and disaster events.

1.1.6. Development of software to support prediction of hazards and resulted disasters.

Immediate Objective 2. To **assess hazards and risks** in **Armenia.**				
Outputs for Immediate Objective 2.				
2.1 Hazard and Risl, Malt.			x	l 1
2.1.1. Creation of Hazard and Risk	l	I	I	I

[1] X-implementation of activities postponed till further receipt of funds. ***ARM/99/012 Disaster Management Project***

X 1

I

database.				
2.1.2. Development of software on the basis of GIS.		x		
2.1.3. Hazard and Risk computation and mapping.		x		
2.1.4. Production of maps on different				

types of hazards and risks.		X		
Immediate Objective 3. To decrease the risks and the impacts of future disasters in Armenia by increased level of preparedness, public awareness, upgraded early warning and information exchange.				
Outputs for Immediate Objective 3.				
3.1 Established Center for **Emergency Situation Management and** network of Operational Information Collection.				
3.1.1. Development of efficient tele/radio communication channel for operational information exchange between responsible national organizations and regions experiencing disasters by installation of new communication hardware between all regions, including Yerevan and most disaster prone areas.		2		
3.1.2. Application of new technologies to support decision-making in case of disaster using game theory and preparing case studies for concrete cases of possible disasters in Armenia with allocation of responsibilities to respective national institutionv.		1		
3.1.3. Establishment of emergency data base on various types of risks, present in Armenia.		1		
3.1.4. Installation of local computer network for EMA.		1		
3.1.5. Installation of computer network to link EMA with sectoral organizations, and EMA regional structures.		X		
3.1.6.Creation of Internet server and WEB page for EMA.		X		
3.2 Deployed early warning system for different hazards in Armenia.				
3.2.1. Upgrade the early warning system				

to the level where it can predict strong earthquakes and other geological and meteorological hazards by physical renovation, purchase of additional equipment where necessary and adequate training of respective personnel.		1		
3.2.2. Physical renovation of the national observation network of the NSSP for use in early warning system.		X		
3.2.3. Creation of software for the early warning.		X		
3.2.4. Installation of the alarm system network for early warning.		X		
3.3. **Decreased vulnerability** of **territories.**				
3.3.1. Development of programmes to decrease vulnerability of territories from seismic hazard, landslides, rockfalls, avalanches, erosion processes and mud flows.		1		
3.3.2. Introduction of multisectoral assessment system for the impact of natural and technological hazards on the environment with acquisition of necessary equipment and adequate training of respective personnel.		1		
3.3.3. Elaboration of programmes on engineering protection of the city of Ijevan from dangerous mud flows.		1		
3.3.4. Development and application of engineering activities to protect		1		

cities, residential and industrial *t:~eriitic_, transpuri* networks And lifeline services from dangerous geological and hydrological processes with purchase of adequate equipment and training of respective personnel.					
3.4. Comprehensive public awareness programme focusing on the involvement of general population in disaster response, preparedness and mitigation, including TV/Radio programmes, publications, posters.					
3.4.1. Development and introduction of training curricula for different layers of population, using		1			

t':n"rU rLt: of otnrr '.oimtrLc: ; nc conditions.

I
I
I

ARM/99/012 Disaster Management Project

I

page *5*

3.4	Training of teachers and educational professionals Disaster **preparedness** in management.	and
3.4.3.	Development of "Emergency Channel" TV programme and	

creation of training videofims to be broadcast on national and reu!onal TVs

3.4.4 Creation of broadcasting of training radio programmes y for *the* population on the national and regional radio channels.

20.04.2000

I

I ! *d*

page *6*

1

3.5. Comprehensive disaster management training programme for high/mid level government officials.

3.5.1. Organization of training courses for the education/training of mid/high level government authorities in the area of risk management.
3.5.2. Creation of videofilms and reference book of legislative documents on disaster management and their use in training programmes.
3.5.3. Organization of training sessions in the form of exercises, analyzing specific emergency situations and providing for development of decision making procedures in disaster management.

1

3.6. Improved medical preparedness.

3.6.1. Installation of information management system for disaster medicine using experience of adequate systems in other countries and purchase of necessary equipment where needed.
3.6.2. Elaboration of legislative documents, regulating state system of forecasting and elimination of medical consequences of disasters.
3.6.3. Training of medical and nonmedical experts in extending medical assistance.
3.6.4. Assessment of possible medical needs in the event of major disaster by producing case tuJrc. !n .on~reft possibl disaster !r, ::rn!eru[:
3.6.5. Creation of mobile autonomous unit for extending sneciali: et! !ssmU'W' ;71 zone with respective training and I

2 I

X

X X

ARM/99/012 Disaster Management Project

20.04.2000

purchase of necessary equipment
3.7. Capacitated Rapid Response forces on the basis of existing units and further increase of the level of their preparedness,

3.7.1. Development of legislative and normative framework of formation of Rapid Response forces with adequate training of respective personnel.
3.7.2. Development of guidelines and manuals on the coordination of Rapid Response Forces in disasters.
3.".3. Physical renovation of training facilities of RRF and their reequipment with modern communication hardware.
3.7.4. Regular training programmes for RRr.

3.8. Functioning network of mobile search and rescue teams.
3.8.1. Development of a programme of coordination center of search and rescue teams by using successful examples from other countries.
3.8.2. Development and application of normative and legislative documents framing the operation of search and rescue teams with training of S&R teams.
3.8.3. Purchase of communication hardware and ammunition for S&R teams.
3.8.4. Elaboration and implementation of a specific training programme for rescuers.
3.9 Disaster insurance structure with limited capacity.
3.9.1. Research on disaster insurance nractlce~ in advanced count rle and elahoratlon of normirrv and legislative documents framing disaster insurance structure in Armenia
3.9.2. Elaboration of disaster insurance concept
3.9.3 Establishment of disaster insurance database.

X
1
1
2
2
X
1
2
x
x

3.10. Developed package of measures discouraging people to migrate from disaster affected areas.

!li.! I.)eVClLrnrr°n) n1 r7rO'rr-::rnn1:: r,. rennet Vtllrir tat)illf'. 471 t rrltor]n', anc settlements in disaster prone areas.

3.10.2. Development of programmes to protect lifelines services in disaster prone areas.		x		
3.10.3. Elaboration of legislative and normative documents on mechanisms of subsidies and tax preferences for temporarily displaced persons to attract them to return to their initial settlements.		x		
3.10.4. Establishment of electronic information network between all disaster/migration related institutions.		x		

3.11. **Reduced socio-psychological vulnerability of affected population and aid workers.** 3.11.1. Analysis of data from international sources in psycho-social vulnerability of population in disasters. 3.11.2. Systematization of data collection and analysis by purchase of adequate equipment. 3.11.3. Development of training manual on reduction of psycho-social vulnerability and stress overcoming. 3.11.4. Training of aid workers on the reduction of vulnerability before, in the course and after the disasters.		X X X X X		
2. Rate the production of target outputs.		2		
3. Are the management arrangements of the project appropriate?				
4. Are project resources (financial, physical and manpowert adequate in terms of: (a) quantity" (b) quality?		1		
~. Are protect resources being used efficiently to produce planned results"		I		
6 k the protect cost-effective cnnai.l? -.~ ', jtnilar interc•ennntin " d	I I	I	1	

7. Based on its work plan. how would you rate the timeliness of *the project in* terms of. (a) Production of outputs and initial results? (b) Inputs delivery"				
	Target group(s)	Project Manager	Government	UNDP
r OVERALL RATING OF THE **PROJECT**		l		

The overall assessment is based on the major achievements of the project in terms of the actual and potential impact and contribution to the establishment and development of the national disaster management structure in Armenia. The core prerequisites for such development may serve, first of all, the establishment and robust development of the first in the South Caucasus region and one of the few in the CIS region Center of Management of Crisis Situations that rests on a sound infrastructural basis of the Emergency Management Administration under the government of Armenia and has all built-in elements required for independent further development. Secondly, the project focus on the training activities ensured raised awareness of the target groups ranging from the Government to vulnerable population of the most disaster prone areas of the country, who were otherwise deprived of such exposure. Creation of such a Center attracted more attention to the disaster management issues both in Armenia and outside. Lastly, regular training sessions conducted for different social groups of population on disaster management was yet another step in ensuring the exchange of views and experiences on a variety of issues related to the sustainable development of the country.

For the government: Name: Enrik Aghalaryan Title: Deputy Head of EMA Signature:

Date: r' Q • f-'~ Y 2 OO /'

For the implementing Agency: Name: Enrib. Aahalarvan
Title: Deputy Head of EMA v`/~ Signature:

Date: 0,9,
~' `~ 7 ***u l)*** **~**

For Project Management:
Name: Armen Grigoryan
Title: Project Co-ordin or
Signature: Date:

For UNDP:
Name: Katica Cekalovic
Title: UNDP Resident Representative
UN Resident Co-ordinator
Signature: Date: } DIV. $\mathcal{Q}\,\underline{f}$

r

SECTION II. TEXTUAL ASSESSMENT

This section provides a detailed assessment of the project achievements through comprehensive analysis and appraisal of each component and its potential impact on the accomplishment of the project immediate objectives and overall performance.

1. Major Achievements of the Proiect Vis-a-vis the Expected Results

Immediate Objective 1.
To decrease the vulnerability of population from natural and technological hazards and resulting disasters.

Implementation of the project activities in the field of disaster management is the first comprehensive effort of international community in Armenia in the mentioned above area. Ever since its initiation the project has been advancing and developing substantially due to its high esteem and recognition among the people of different age groups, gender, as well as individuals involved in various fields of disaster management.

The project was designed to pursue the following objectives:

- To help the efforts of the government in increasing the level of preparedness of the country to occurrence of possible disaster.
- Encourage creativity and efforts of local communities on taking measures to protect themselves ire case of occurrence of possible disaster.
- Contribute to the development of National Disaster Preparedness Plan and improve the co-ordination of all national and international actors in Armenia in the field of disaster management.

Output 1.1. **Improved prediction of technological hazards and local natural hazards up to 75% of all occurring disasters.**

1.1.3. Physical renovation of communication network and purchase of equipment when necessary.

- One of the first steps of the project was the assessment of various hazards and risks present in Armenia. According to the Emergency Management Administration (EMA) all types of hazards are present in Armenia except oceanic, which is because Armenia is a land locked country and has no sea. For the improved prediction and monitoring of seismic hazard in Armenia, which has the highest probability rate among others as well as the highest casualty rate *Seismic Recorders* (sensitive electronic equipment registering seismic activity) were purchased and provided to National Survey for Seismic Protection (NSSP). For the improved transfer of information regarding seismic activity from all regions of Armenia to the data acquisition and

interpretation center at NSSP, autonomous telephone station for 32 users/channels were also purchased and provided to the NSSP. According to estimates of the NSSP experts, seismic recorders of this sensitivity would provide increase in monitoring and prediction capacity of NSSP up to 75%.

1.1.4. Update of the established database on different hazards and disasters.

~ One of the most important areas of project's activities was update of existing database on different types of hazards, existing in Armenia. Mechanical collection of information regarding the existing hazards was not satisfactory, therefore automated support to the process was required. Improvement of hazards' database allows increase the level of preparedness and awareness of population. For this purpose a type of software needed was identified and leaders in the international market of producing such software were contacted. The selection fell on Institute of Safe Development of Atomic Energy (ISDAE) in Moscow, Russia, which has provided the EMA with the GIS needed for upgrade of the hazards' database. ISDAE is a specialized institution in the field, covering all former Soviet Union countries. It is also recognized in the West as produced similar software products for NATO, UN DHA and etc.

1.1.5. Evaluation of disasters occurred within last ten years in order to identify the linkages between hazard precursors and disaster events.

• Study of existing materials regarding disasters occurred in Armenia within last 10 years, including earthquake in Spitak in 1988 was conducted by experts of EMA. Certain correlation between number of hazard precursors and actual emergence of disasters were identified on a theoretical level. At the same time, it is difficult to

prove straight connection between them due to lack of repeated events.

1.1.6. Development of software to support prediction of hazards and resulted disasters.

- Prediction of occurring hazards is another vital component of the project. As mentioned above Institute of Safe Development of Atunuc Energy (ISDAE) is one of the world leaders in this field and the most developed institution in the CIS. The Institute has developed a GIS (software) for the EMA and trained 4 specialists from EMA in Moscow. Twice representatives of the institute visited Armenia for information collection and input of data in the software. Currently, the automated system, which is being used and regularly upgraded by EMA serves as a computerized support to decision making procedures. The GIS has shortened considerably the period between the occurrence of disaster and decision made by responsible authority to cope with it. It has also provided tools for EMA and other respective institutions to predict potential development of emergency. As a follow up to this activity, an external on line electronic connection is envisaged for EMA, which will bring to possibility of on line monitoring of situation at the actual disaster site.

Immediate Objective 3.

To decrease the risks and the impacts of future disasters in Armenia by increased level of preparedness, public awareness, upgraded early warning and information exchange.

Output 3.1.
Established Center for Emergency Situation Management and network of Operational Information Collection.

3.1.1. Development of ***efficient•te*** *e/radio communication channel for operational information exchange between responsible national organizations and regions experiencing disasters by installation of new communication hardware between all regions, including Yerevan and most disaster prone areas.*

- Communication is very important especially autonomous means of communication, which are sometimes the only reliable ones in case of disasters. As a co-ordinating body on the national level in case of disasters EMA was provided radio equipment for both installation of rescue vehicles located in the capital, Yerevan and in the regions, as well as for responsible authorities in the regions of Armenia for better organization and coordination of post-disaster activities in the field and improved connection with Yerevan and external world.
- Another aspect of improvement of disaster telecommunication is the on line electronic connection between major players on national level in case of occurred disaster, i.e. EMA, President, Government, Parliament. This part of the activity will be executed in 2000 under UNOPS execution.

3.1.2. Application of new technologies to support decision-making in case of disaster using game theory and preparing case studies for concrete cases of possible disasters in Armenia with allocation of responsibilities to respective national institutions.

- GIS obtained from ISDAE was used in September 1999 during international practical exercise on Armenian Nuclear Power Plant organized by EMA. International Atomic Energy Agency (IAEA), Armenian Nuclear Regulation Authority (ANRA), Armenian Nuclear Power Plant, French Civil Defense, Federal Emergency Management Administration of the USA (FEMA), Royal Emergency management Agency (UK) participate din the event. During the exercise participants were divided into several groups and each groups received its assignment for an imaginable disaster. Project Co-ordinator participated in the exercise as well.

3.1.3. Establishment of emergency data base on various types of risks, present in Armenia

- Database on various types of disasters existing in Armenia is being regularly updated by the EMA and other respective institutions, such as National Survey for Seismic Protection (NSSP), National Disaster Medicine Center, national Stress Center and etc. Mechanical collection of information regarding the existing hazards was not satisfactory, therefore automated support to the process was required. Improvement of hazards' database allows increase the level of preparedness and awareness of population. For this purpose a type of software needed was identified and leaders in the international market of producing such software were contacted. The selection fell on Institute of Safe Development of Atomic Energy (ISDAE) in Moscow, Russia, which has provided the EMA

with the GIS needed for upgrade of the hazards' database. ISDAE is a specialized institution in the field, covering all former Soviet Union countries. It is also recognized in the West as produced similar software products for NATO, UN DHA and etc. Although the software was produced for EMA, there is a clause in the agreement saying that other institutions involved in disaster management in Armenia may have access to it as well.

3.1.4. Installation of local computer network for EMA.

- Lack of internal electronic communication was another problem of the EMA, which was identified by the project. Internal network would speed up the daily work of the EMA, but the main argument for

establishment of internal network was increased effectiveness of EMA in terms of disaster identification, decision making and post disaster activities and co-ordination. Physical location of rooms in the EMA was conducted, independent experts provided consultations regarding the location of PCs in the local network, location and type of the server and regime of work. Subcontracted company also trained EMA employees in server operation.

3.2 Deployed early warning system for different hazards in Armenia.

3.2.1. Upgrade the early warning system to the level where it can predict strong earthquakes and other geological and meteorological hazards by physical renovation, purchase of additional equipment where necessary and adequate training of respective personnel.

- Seismic recorder and communication means for transfer of information from seismic recorders installed in various regions of Armenia were purchased by the project and provided to the National Survey of Seismic Protection (NSSP). Both installed and functioning under auspices of the NSSP. According to the experts of the NSSP it has increased their capacity to monitor and what is more important to predict possible seismic activity in the region.

3.5. Decreased vulnerability of territories.

3.5.1. Development of programmes to decrease vulnerability of territories from seismic hazard, landslides, rockfalls, avalanches, erosion processes and mud flows.

- Two major programmes were elaborated by the leading Armenian institutes in their respective fields. Programme of engineering protection of the city of Ijevan from mudflows was elaborated by "ArmEngProject" Institute, which was selected on the basis of bidding process and recommendations of independent experts and national government. In the year of 200 the actual construction of engineering protection measures elaborated as a programme within the framework of the project is envisaged. Programme provides schemes and graphics for the construction of anti mud flow wall (widenees 55-60 m, height 3 - 6 m, thickness 2 - 6 m).
- The second programme was elaborated by the Yerevan Institute of Architecture and Construction base don the same principles and rules. Passports of technical condition of all bridges, underground passages and lineroads were elaborated and old ones updated. Existence of updated puvsports of technical condition of bride^-, under_ ound pa~sa_s and lineroads in Yerevan allows to have improved knowledge of vulnerable engineering

constructions in the city. Most urgent works are recommended by the EMA to be included in the year of 2001 for funding by the government.

3.5.2. Creation of videofilms and reference book of legislative documents on disaster management and their use in training programmes.

- Reference book on existing legislative and normative documents in the legal field of Armenia regarding disaster management was elaborated and published by Crisis Management Institute (CMI) of EMA in the framework of the project. Limited number of reference book copies were

distributed among national institutions involved in disaster management in Armenia. Some copies are left at the CMI for training purposes.

*3.5.3. Organization of **training sessions** in the form of exercises, analyzing specific emergency situations and providing for development of decision making procedures in disaster management.*

- Number of training session were. organized both in Yerevan and in the regions of Armenia. Mid-high level local authorities and mid level national authorities participated in the sessions. Disasters specific to Armenia in general and to certain regions in particular were assessed. Decision making procedures were discussed and new approaches were elaborated. Participatory approach of the sessions allowed fox active involvement of local initiatives into the framing of national policy in this respect. As a result of training sessions new proposals for joint actions between EMA/CMI and benefiting national and regional institutions were made.

3.6 Improved medical preparedness.

3.6.3. Training of medical and non-medical experts in extending medical assistance.

- Training of medical and non-medical personnel in extending first medical aid was organized in cooperation with First Aid Center of the Armenian Red Cross Society (ARCS). Expertise of the National Disaster Medicine Center and Ministry of Health was used. Representatives of the regional organizations of EMA and ARCS were present at the training alongside responsible authorities on regional level from the Aragatsotn region of Armenia

3.6.5. Creation of mobile autonomous unit for extending specialized medical assistance in a disaster zone with respective training and purchase of necessary equipment.

- Two specialized ambulance vehicles were purchased for join utilization by "Ambulance" National Center, Scientific-research institute on First Aid and EMA, agreement between which framing their cooperation is signed in November 1999. According to agreement, "Ambulance" institute provides medical personnel in case of emergency for two vehicles, as well as drivers. The scientific-research institute covers the maintenance costs of the two vehicles, whereas EMA provides rescuers in case of emergency, organizes joint training sessions and co-ordinates overall utilization of the vehicles.

3.7. **Capacitated Rapid Response forces on the basis of existing units and further increase of the level of their preparedness.**

3.7.2. Development of guidelines and manuals on the coordination of Rapid Response Forces in disasters.

- A manual and a guideline material was elaborated by EMA, CMI, ARCS, nongovernmental rescue teams. The manual indicates the order of work in case of emergency, as well frequency

of required regular joint practical exercises and training sessions for rescuers from different teams.

3.7.3. Physical renovation of training facilities of RRF and their re-equipment with modern communication hardware.

- Requested radio communication equipment was purchased for the needs of the Rescue Team of the EMA. The new equipment provides for improved communication among various units of EMA in case of occurred emergency. Both handsets and specials sets for installation on rescue vehicles are purchased, which of course at least doubled the mobility of communication. The hardware was used during the international practical exercise on Armenian nuclear plant in September 1999, which led to better results demonstrated by Armenian rescue team of EMA.

3.7.4. Regular training programmes for RRF.

- Training programme and practical exercise of the EMA rescue team were held. Participation of non governmental rescue teams was insured, and coordination between state and NGO teams was emphasized as a priority. UNDP RR, Project Co-Ordinator and UNDP core staff attended the practical exercise of the rescue teams and witnessed the cooperation between state and NGO rescuers.

3.8. Functioning network of mobile search and rescue teams.

3.R 1. Development of a programme of coordination center of search and rescue teams by using successful examples from other countries.

- Research was conducted in the field of rescue team co-ordination. Four governmental authorities were invited by French Civil Defense to participate in a week long training France, once of aspects of which was co-ordination among governmental and NGO rescuers. Participation of Armenian delegation was co-funded by the project. Experience gained there was used in elaboration of principles for creation of co-ordination center for search and rescue teams on national level with strong links to regional and international similar structures.

3. 4.3. *Purchase* of comrmunicatioa7 *harthi ore and ammunirwn fr S&1? terms.*

- Communication hardware was purchased for S&R Team of EMA, which was tested and used during the international practical exercise in September 1999 on the Armenian nuclear power plant. Alongside radio communication hardware, satellite phones were purchased for use in extreme situation, where no other means of communication with external world are available.

3.8.4. Elaboration and implementation of a specific training programme for rescuers.

- Special training programme for rescue teams was elaborated by EMA, CMI, ARCS, non-governmental rescue teams. Based on the jointly produced programme respective practical and theoretical training sessions were conducted, where participants from all major governmental and NGO rescue teams were present. Over 100 rescuers participated in the training sessions, where respective handouts and publications were delivered to them alongside core presentation and seminar topics.

2. Factors that Affected the Achievement of the Project Results

Almost all the objectives set forth by the project have been accomplished. However, there were certain factors that affected the course of the implementation of the project, both within the management structure of the project, and in the overall context of disaster management structure in Armenia.

One of the major factors, which affected achievement of the Project results was that National Survey for Seismic Protection (NSSP), which closely participated in preparatory stage in elaboration of the project, while being a part of the Emergency management Administration under the Government of Armenia (EMA), separated from it and became and independent structure. Since the upcoming regional project on disaster management in Armenia is primarily dealing with the seismic risk reduction and the main government counterpart is the NSSP, points in the national project related to the reduction of seismic risk were changed and priority was given to other components bearing in mind that the whole regional project (its part in Armenia) will be dealing exclusively with the seismic risk reduction.

Another reason why some of the objectives of the project were not timely achieved was that project was implemented in the national execution mode, which implied that the Government counterpart and the executing agency were to follow the UNDP procedures in purchasing, subcontracting and etc. This was all new for the EMA and it took some time for them to fully comprehend and follow these regulations. Most of the requests from EMA were processed by the Project and UNDP country office staff and returned to EMA for incorporation of comments. In fact, some of the requests were conducted twice, and UNDP and Project staff had to redo the whole request, which was even more time consuming that if Project or UNDP country office staff would have done it themselves.

One factor that somewhat complicated the course of the implementation of the project was that a substantive revision of the project document that had to be prepared further to a Tripartite Meeting was postponed. This delay also affected the implementation rate.

One more aspect of the achievement of the project results is that the government **was twice reshuffled** during the implementation of the project, and although the administration of the government counterpart was not changed, changes in the prime ministers office affected the rate of implementation and therefore, some of the planned for the duration of the project results were not completely achieved.

3. Lessons Drawn From the Experience of the Project

The primary lesson drawn from the experience of the Project is that such an intervention in the disaster management area in Armenia was extremely timely and viable. In the global context, major changes in disaster management in Armenia were underway since 1991, when the EMA was established replacing previously existing Civil Defense structure, which was mainly oriented on elimination of consequences of nuclear attack of a potential enemy. Moreover, for countries like Armenia that possess little natural resources, are landlocked, and undergo fundamental transformation in all spheres of national life, capitalization on the human potential and technology is still considered as an essential prerequisite for successful transition to democratic society and market economy. According to experts of EMA/CMI all types of natural disasters are possible in Armenia with exception of oceanic hazards, which means that Armenia is very disaster - prone country. In this respect, the changes the project introduced in the increased awareness of population about disaster management practices and in the increased level of preparedness of respective national institutions, which provide for development at the national level are hard to underestimate.

Another important lesson drawn is that development interventions are successful and longlasting provided the recipient country possesses adequate legislative and institutional framework and national capacity for capitalization on the achievements made in the framework of projects of cooperation with international and other institutions. In the case of the project, its activities took place against the background of lack of any strategic and regulatory policies at the national level and by virtue of its being the first large-scale initiative for the development of the sector, was a pioneer in paving the way for future activities. In this context, the project accomplishments demonstrated both to the government and to the society at large as to what improved disaster management infrastructure can do for sustainable and harmonious development in all sectors of national economy, and it is hoped that this experience will not be late in translating into amended legislative and institutional frameworks inductive for the development of national disaster preparedness plan (NDPP) in Armenia, elaboration of which is envisaged should the additional funds be secured for the project.

The intervention of UNDP in supporting the development of NDPP was a right way to support the sustainable human development of Armenia. The sector of disaster management was rightly and timely identified and appropriately targeted. In case UNDID decides to further continue its interventions in the sector, it will have to insure adequate capacity for the most effective and comprehensive intervention for provision of required technical assistance and cooperation.

Finally, the experience of the project demonstrated that in the current world of boosting technology, telecommunication and technology fields of disaster management shall be given more serious consideration in terms of post-installation maintenance, training of personnel and upgrade if necessary, with continued stress on comprehensive training activities.

4. Views of Target Groups With Regard to the Project

The project addressed the development needs of an extremely wide and diverse range of target groups from the Government of Armenia and specialized governmental units to civil society organizations and individual researchers. Representatives of al types of target groups were involved in training sessions organized by the project, most of them also received technical assistance of the project, and expertise of some of them was utilized by the project by means of subcontracts. Therefore, it is understandable that all the target groups welcomed the opportunities and services offered by the project, and demonstrated a positive reaction towards the project. Such attitude

expressed itself, among other things, in numerous expressions of gratitude and appreciation on the part of the beneficiaries and cooperating institutions of the project.

A specific view on the project is that of potential or previous victims and survivors of natural disasters. In spite of the obvious fact that the activities of the project were targeted at supporting the nascent national disaster management infrastructure and all its stakeholders, the interaction with the institutions involved in disaster management in Armenia had the nature of cooperation and competition at the same time.

The project files contain ample documentation related to the above views of target groups with regard to the project.

5. Implementation Status of Evaluation Recommendations

Project revision took place in October-November 1999, at which it was decided to change the mode of implementation of the project from NEX to UNOPS execution. Project files contain all necessary information in this respect including positive position of the government counterpart regarding the change in the implementation mode. There was one audit for the project, which took place in April 2000. The recommendations of the auditors are contained in the audit report enclosed to this Report.

6. Follow-Up Activities

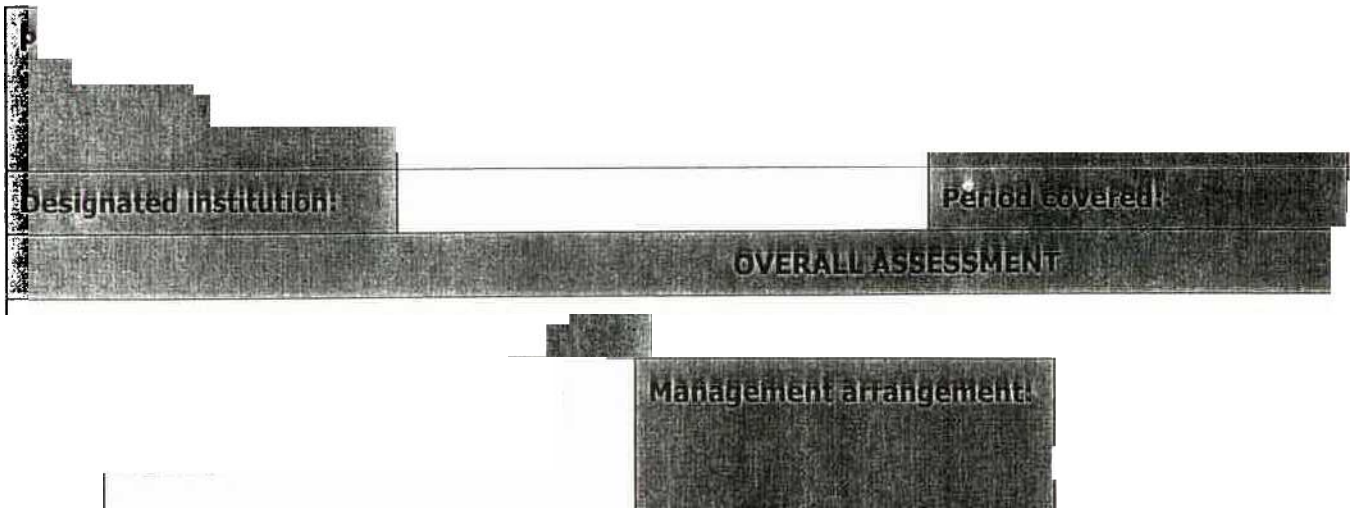
Follow up activities to the project include continuation of the process of achievement of the project objectives within the framework of the UNOPS executed project, which is actually a continuation of the initiated NEX executed project, which lasted from February 10, 1999 till December 31, 1999.

As the new project document for the UNOPS executed project contained unachieved results from the previously NEX executed project, it is considered as a follow up to the actions taken within the framework of the project of 1999. In this respect, some activities were reconsidered in agreement with the government counterpart and new priorities outlined in
the light of changed situation in the disaster management field in Armenia due to intervention of project and increased international cooperation of the EMA, which also is one of the achievements of the project.

SECTION III. Project Summary Table

#~] d j ***Ci; Lr.* IU *'~i***

20.04.2000



ARM/99/002 Sustainable Emergency Management and Communication Network

Emergency Management Administration under the I Government of Armenia, Executing Agency

February 1998 -- December 1999 5s

The overall assessment is based on the major achievements of the project In terms of the actual and potential impact and contribution to the establishment and development of the national disaster management infrastructure In Armenia. The core prerequisites for such development are, first of all, the establishment and robust development of the Center of Emergency Situations Management (CESM) under EMA, which is the first in the South Caucasus region and one of the few in the CI5 region computerized on line disaster management system with adequate GIS systems, it rests on a sound infrastructure basis and has all built-in elements required for Independent further development. Secondly, the project focus on the training activities ensured raised awareness of the target groups ranging from the Government to vulnerable segments of the civil society who were otherwise deprived of such exposure.

The project managed to implement the majority of activities and attain the majority of outputs set forth by the all parties involved. At the same time, there *wei e certain factors of both internal and external factors that affected and/or impeded the smooth and full Implementation of the project.*

1 he experience of the Project demonstrated that such an Intervention in the field of disaster management In Armenia was extremely viable and timely. i n the global context, the established In 1991 structure has Initiated restructuring of its system, however, the strong support from the project lead to further development of the new approaches. Moreover, for countries like Armenia that possess little natural resources, are landlocked, and undergo fundamental transformation in all spheres of national life, capitalization on the human potential and technology is still considered as an essential prerequisite for successful transition to democratic society and market economy. In this respect, the changes the project introduced €n the disaster management area, in Its technical assistance trainin and other corn onents at the national level are hard to underestimate.

Source of funds	Amt
TRAC (3)	1999 – 600,000 *Total: 600,000*

~~~~

1Q@9 '211,4]4 2OOO-11,34O

Total' 225,774

	35,7% 1,2% *36,9%*
~~~~

SUMMARY OF RESULTS		
Project Immediate Objectives	Indicators/Outputs	Achievement of
Obj.1		
Obj. 2	To assess hazards and risks in Armenia.	Creation of hazard and risks maps.
	To decrease the vulnerability of **population from natural and technological hazards and resulting disasters.**	**Improved prediction of technological hazards and local natural hazards up** to 75% of **all occurring disasters.**

!-'urchaso of ddedudle equipment 1or upyrade of naUonal mondorng and observation network

- Update of existing data base on natural and technological disasters in the region
- Evaluation of the disasters occurred within last ten years for better identification of linkages between disaster precursors and actual events

Development of GIS/software for incorporation of disaster management, monitoring and early warning in automated on line regime with automated support to decision making process in case of occurred disaster

- Regular upgrade of elaborated software and addition of new data into it

(The activity is currently being Implemented under the new project, which Is a continuation of this project)

Obi. 3

To **decrease the risks and the** impacts of future disasters in Armenia by **increased level if preparedness, public** awareness, upgraded early **warning and** information exchange.

Established center for emergency situation management (CESM).

heplny ed early warning system fur different hazards in Armenia.

Decreased vulnerability of territories.

Comprehensive public awareness programme focused on involvement of population in disaster response, preparedness and mitigation, prevention, including TV/Radio programs, publications, posters and on-site practical exercises.

CESM is created with software elaborated, updated and GIS installed Into it.

Automated decision-making procedures are incorporated into the Center's mandate In case of occurred disaster with allocation of responsibilities in case of occurred disaster.

Data base on various types of risks and hazards existing in Armenia is created and being regularly updated.

Local computer network for EMA/CESM is created for better and timely response on occurring hazards and risks and ability to monitor the situation in on line regime.

National early seismic warning system of the National Survey of Seismic Protection (NSSP) has been upgraded with modern sensitive equipment and autonomous means of transformation of seismic data.

Programmes to decrease vulnerability of bridges, underground passages and lineroads in the city of Yerevan were elaborated.

Programmes on decrease of vulnerability of territories adjacent to the city of Ijevan from land slides were elaborated.

Training curricula for different groups of population were elaborated.

"Emergency Channel" TV programme was further developed and equipped with modern means of TV production.

Disaster management training programmes were elaborated and sessions conducted on the national radio channel.

20.04.2000

Comprehensive disaster management training programme for mid/high level government officials.	Risk management training sessions for local administration officials in three regions of Armenia and in Yerevan were conducted. Reference book on existing hazards and risks for Armenia was elaborated.

International practical exercise on disaster management with concentration on Nuclear Power Plant was

successfully held in September 1999 with involvement of government officials at all levels.

Improved medical preparedness.

Capacitated Rapid Response Forces on the i)ASis of existing special units of governmental and non-governmental organizations and insiitutions, and further increase of level of their preparedness.

Functioning network of search and rescue
teams.

Training of medical and non-medical personnel in extending first medical aid was conducted.

Reference book on calculation of possible medical needs in case of occurred specific disaster was elaborated.

Two mobile autonomous groups equipped with rescuers and doctors were created with purchase of two ambulance vehicles.

Guidelines and manuals for coordination of activities of the rapid response forces were elaborated.

State Rapid Response team was re-equipped with modern means of mobile telecommunication.

Regular practical and theoretical training programmes for rapid response teams were conducted.

Programmes on coordination of activities of S&R teams in case of occurred disaster were elaborated.

Communication equipment was purchased for the state S&R team.

Specific training programmes for S&R teams were elaborated and training conducted.

		Ensured Sustainability of the Project Efforts	Proposals for sustainability of project efforts elaborated. On the basis of achievements project has reached, various activities wer initiated by governmental structures, **which** enable for sustainabil of the project. Also project will have its logical continuation in the year of 2000 under different execution mode.