

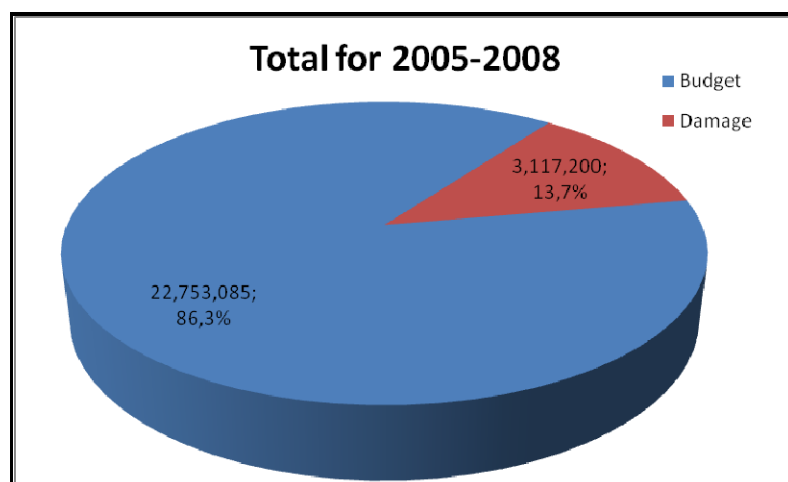
## AYNI DISTRICT.

### Chapter VIII. Preparedness to Emergency Situations, Prevention and Reduction of Risks

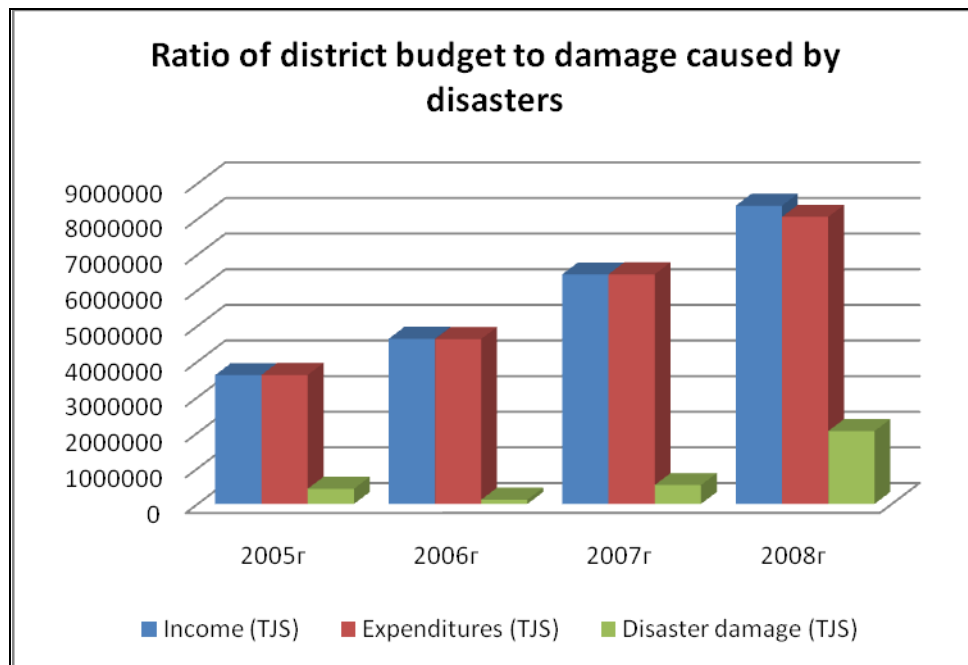
Ayni district is situated in the north of Tajikistan. District size is 5200 sq. km. Population size is 75,686. The population density is 14,5 people per km<sup>2</sup>. The district has 8 jamoats.

For the period from 2005 to 2008, 26 emergency situations had been registered in Ayni district which included: two mudflows, twelve landslides, four avalanches, six snowfalls/light frosts and two rises of waterline in the rivers. The amount of damage caused by disasters the economy of Ayni district made up 3,117,200 Tajik somonies (TJS) that is equal to 13.70 % from the total budget of four-year period. The attached table and diagram contains both the ratio of the damage to the annual budget per years, and their percentage measurement.

The ratio of district budget and damage from emergencies					
	2005	2006	2007	2008	Total
Income (TJS)	3617044	4636299	6444533	8372703	23070579
Expenditure (TJS)	3620593	4628033	6445513	8058946	22753085
Damage from disasters (TJS)	425100	118500	529000	2044600	3117200
Damage from disasters (%)	11.74	2.56	8.21	25.37	13.70

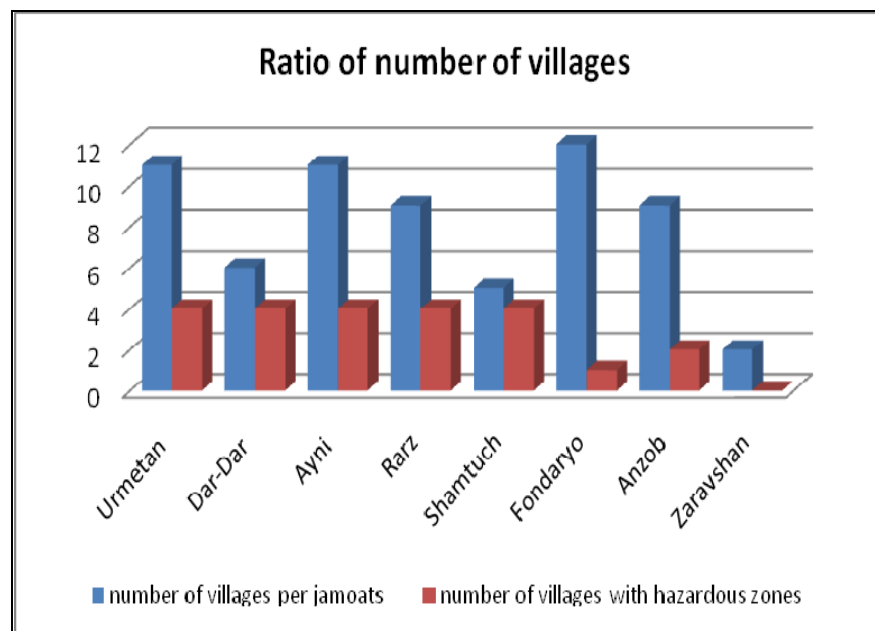


The dynamics of damage increase as a result of disasters shows that the greatest damage was caused to the economy of given district in 2008; the amount of the damage in this period exceeded the amount of common damage for the last three years and was equal to 2,044,600 TJS.



The territory of Ayni district is exposed to the hazardous processes. Among eight jamoats, only Zaravshan jamoat does not have zones with hazardous processes. In the rest 7 jamoats, 1 to 4 villages, have hazardous zones. In total there are 26 villages with hazardous processes in the district.

Jamoat	% of villages with dangerous processes
Urmetan	36.4
Dar-Dar	66.7
Ayni	36.4
Rarz	44.4
Shamtuch	80.0
Fondariyo	8.3
Anzob	22.2
Sh.Zaravshon	0.0



Frequently, the same village can suffer from several hazardous processes. As a rule, mudflows, landslides, rock falls, landslips, avalanches, snowfalls and frosts are the reasons of emergency situations.

The table below contains the list of hazardous geological processes in the villages. The whole district is subject to such snowfalls and frosts.

<b>Jamoat</b>	<b>Village</b>	<b>The type of hazardous processes</b>	<b>Jamoat</b>	<b>Village</b>	<b>The type of hazardous process</b>	
<b>Urmetan</b>	Urmetan	Mudflows	<b>Shamtuch</b>	Guzoribod	landslides, rock falls	
	Yovon	mudflows, erosive processes		Pohut	landslides	
	Revad	Mudflows landslides rock falls		Shavkati poen	Rock falls	
	Vashan	landslides		Veshab	landslides, rock falls	
<b>Dar-Dar</b>	Iskodar	mudflows		Shamtuch	rock falls	
	Dar-Dar	collapse of shore		Darg	rock falls	
	Kum	mudflows		Utogar	rock falls	
	Zerbod	landslides		<b>Fondaryo</b>	Mahshevad	landslides
<b>Ayni</b>	Puthin	landslides		<b>Anzob</b>	Takfon	landslips
	Kuhrud	mudflows, landslides			Pishanza	landslides
	Zindakon	mudflows, landslides	168, 170 km of the road Dushanbe-Khujand		landslides	
	Hushekat	landslides, rock falls	16 km of the road Ayni- Kuhistoni Mastchoh		landslides	
<b>Rarz</b>	Fatmev	landslips, rock falls				

33,590 people (7,039 dehqan farms) which is 44.38% of the total amount of the population, live in the villages with hazardous zones.

	<b>Urmetan</b>	<b>Dar-Dar</b>	<b>Aini</b>	<b>Rarz</b>	<b>Shamtuch</b>	<b>Fondaryo</b>	<b>Anzob</b>	<b>Total</b>
<b>Number of farms</b>	1,644	1,447	921	1,048	1,212	355	412	7,039
<b>Population</b>	7,121	6,741	4,635	5,232	6,064	1,654	2,143	33,590

While comparing the supply side of the budget per sectors for 2005 - 2008 period and calculating the damage caused for the same period, it was found out that the greatest damage, both in percentage and cumulatively fell on agriculture. The disaster damage for agriculture made up 799,800 TJS for the mentioned period which is equal to 3.3 % of the total amount of the supply side.

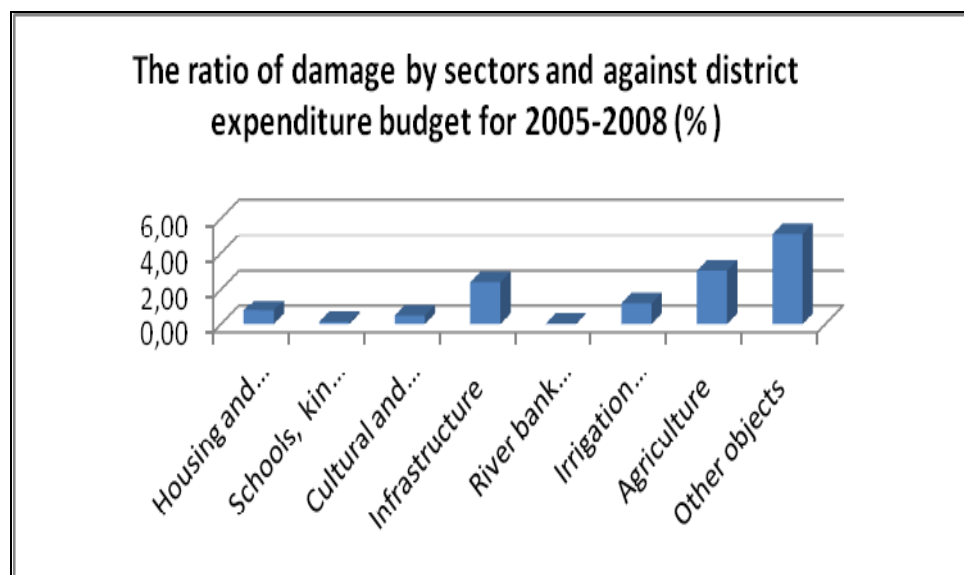
<b>Total amount of damages to district economy by sectors (TJS)</b>					
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
Housing and communal	95,500	3,600	15,000	61,500	175,600
Social sector, education, public health	0	21,100	0	114,900	136,000
Infrastructure	249,200	47,800	385,200	153,400	835,600
Agriculture	51,500	3,300	128,800	616,200	799,800
Other objects	28,900	42,700	0	1,098,600	1,170,200

Since the arable area, makes up only 0.76% of the total district territory (3,962 ha), i.e. about 0.05 ha per capita, the disaster damage caused to agriculture is significant both for the industry, and for the population.

Thus, due to limited land resources and significant damages from disasters, the issue of protection of the agricultural lands and agrarian sector in general against floods, mudflows and landslides, by means of building appropriate protective structures, such as the river bank strengthening, mudflows bypasses, drainage networks, strengthening of landslide slopes becomes critical. These measures should become the mainstreaming aspect of the development plans.

<b>The ratio of damage by sectors and district expenditure budget (%)</b>					
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total for 2005 - 2008</b>
Housing and communal	2.64	0.08	0.23	0.76	0.77
Schools, kindergartens	0.00	0.46	0.00	0.10	0.13
Cultural and residential objects	0.00	0.00	0.00	1.33	0.47
Infrastructure	6.42	1.03	1.86	1.81	2.40
River bank strengthening	0.00	0.00	0.00	0.09	0.03
Irrigation channels and canals, total	0.46	0.00	4.12	0.00	1.24
Agriculture	1.42	0.07	2.00	6.28	3.03
Other objects	0.80	0.92	0.00	13.63	5.14

Analysis shows that district economy needs implementation of the appropriate complex of preventive measures to prevent and liquidate emergencies. However these measures require adequate material and financial resources to be envisaged in the district budget.



The monitoring of activities of the international organizations working in this district directed towards improvement of people's livelihoods and disaster risk reduction showed that international organizations

mainly concentrated on projects related to provision of potable water to population, rehabilitation of roads and bridges, rehabilitation of mudflow channels and river bank strengthening. Starting from 2006 and up to the beginning of 2009 international organizations had spent 443,903.081 US dollars:

United Nations	397, 103.81
German Agroaction	30, 000
Mission East	16, 800
<b>Total</b>	<b>443, 903.81</b>

At the same time, district does not have annual revenues which could cover implementation of the mitigation works.

The disaster readiness and response structure of Ayni district looks as follows:

**Disaster Preparedness and Response Structure of Ayni district**

**Chairman of Ayni district**

**First deputy  
Chairman**

Evacuation commtee

Animal and plant  
protection service

Law Enforcement  
Service (Department of  
Interiors)

Fire fighting  
service

**Deputy  
Chairman on  
economic issues**

Trade and food  
services

**District commission on  
emergency cases  
Chairman of  
commission:**

*Chairman of the district*

**Deputy Chairman of  
commission.**

*Chairman of the staff on  
emergency cases*

**Secretary of the  
committee**

*Head of Chairman's office*

**Members of  
commission;**

*Heads of appropriate district  
services*

Jamoats

**Deputy Chairman  
on construction  
and industry**

Transport services

Road services

Communal  
services

Energy services

Mudflow and river bank  
strengthening protection  
service

Warning and  
Communication  
Service

**Deputy Chairman  
on social and  
cultural affairs**

Medical services

Sanitary and  
epidemiological  
surveillance  
service

At present, Ayni district has 13 departments involved in disaster response actions. Below, there is a list of given departments with indication of available forces and means, reserves and needs:

<b>Warning and Communication Service (OJSC Tojiktelekom)</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
1. CCP <sup>1</sup> – 1 unit. 2. Vaz NiVA – 1 unit. 3. Gaz 52 – 1 unit. 4. Generator – 2. (1 non-working) 5. Village communication centers– 8 units: <ul style="list-style-type: none"> <li>• Urmetan – 1 unit.</li> <li>• Dar-Dar – 1 unit.</li> <li>• Ayni – 1 unit.</li> <li>• Rarz – 1 unit.</li> <li>• Shamtuch -1 unit.</li> <li>• Fondaryo – 1 unit.</li> <li>• Anzob – 1 unit.</li> <li>• Sh. Zaravshon 1unit.</li> </ul>	none	<ul style="list-style-type: none"> <li>• Fuel – 5 tons</li> <li>• Emergency communication vehicle –1 unit.</li> <li>• Posts for communication lines– 115 units.</li> <li>• Field cable – 15 km.</li> </ul>
<b>Medical Services (Central hospital)</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
Vehicles - 4 units (2 not working) Movable Disinfection chamber – 1 unit. X-ray apparatus – 2. (1 non-working) Fluorography equipment– 1 unit. 78 doctors; 243 nurses	10% of medicine (from needs)	First aid vehicles – 5 units. Movable Disinfection chamber – 1 unit. Fluorography apparatus 1 unit. Movable surgery chamber– 1 unit. Set of medical instruments, tents, medicines. Fuel
<b>Law Enforcement Service (Department of Interiors)</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
65 employees 7 inspectors in jamoats and 2 in the district. 5 cars (2 in state road Traffic, 3 company car)	None	Special vehicle communication system 1 vehicle Radio stations 16 units. Fuel. Escort vehicle – 1unit.
<b>Fire fighting service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
1 vehicle	50 liters	Motor car-ladder (or to repair the available one) – 1unit. Fuel, spare parts

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<sup>1</sup> Central Cue Post



<b>Road and transportation service (Open Joint-Stock Company Kosimjon)</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
Trucks (2 not working) – 5 units Passenger buses (7 not working) – 10 units YAZ 469 (not working) – 1 unit	None	Passenger buses - 17 units. Trucks – 10 units. Accumulators, spare parts, Fuel.
<b>Transportation service (MNDRA)</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
S-100 – 5 units. (2 not working) S-130 – 3 units. (1 not working) GT 75 – 5 units. (3 not working) Grader – 3 units. (2 not working) Excavator – 2 units. Autocrane – 1 unit. (not working) Sanitary equipment 1 unit (not working)	None	Loader – 2 units. Grader – 2 units. Fuel – 50 tons.
<b>Communal Service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
Gaz 53 truck – 1 unit. ZIL (sprinkler) – 1 unit. (non working) GAZ 52 (TV Tower) 1 unit. Tractor T40 with trailer – 1 unit. (not working) GAZ 53 cesspool truck– 1 unit. (not working)	None	TV Tower – 1 unit. Lorry – 1 unit. Sprinkler– 1 unit. Cesspool car 1 unit. Tractor T40 – 1 unit. Excavator – 1 unit. Bulldozer – 1 unit. Fuel – 10 tons Spare parts Construction materials
<b>Sanitary and epidemiological surveillance service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
28 employees Containers for the analysis – 2 units Test laboratories – 2 units Vehicle (not working) – 1 unit	Chlorine 70 kg.	Mobile disinfection chamber – 1 unit Chemical reagents for chemical laboratory and bacteriological laboratory, Fuel
<b>Trade and food service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
District Consumer's association	None	Foodstuff, clothes reserves, Fuel

<b>Animal and plant protection service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
<b>Agricultural department</b> Tractors - 85 units (46 not working) Vehicles – 7 units. (not working)	None	None
<b>Veterinary department</b>  Vehicles - 2 units <b>Veterinary laboratory</b> Vehicle – 1 unit		
<b>Energy supply service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
Substations – 4 units. Autocrane – 1 unit Equipment – 1 unit Emergency vehicle – 1 unit	None	Posts– 3 units. Wires– 5 km. Cable AVVG 50 – 1 km. Transformer – 3 units. Fuel –2 tons.
<b>Mudflow and river bank strengthening protection service</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
Total amount of equipment - 32 units ZIL truck – 1 unit Motor car – 1 unit Pump stations – 9 units	None	Auto crane (16 ton) – 1 unit. Autoloader – 1 unit. KAMAZ – 2 units. Tractor MTZ 82 – 1 unit. Fuel – 15 tons Spare parts
<b>Ayni district CoES office</b>		
<b>Available forces and assets</b>	<b>Available stocks</b>	<b>Needs</b>
None	None	

It is important to note that disaster risk reduction should be considered as a complex, crosscutting issue impacting all areas of the infrastructure since all sectors suffer from disasters. Therefore, integration of the disaster risk reduction measures into local planning by means of disaster preparedness and responses plans is the basic goal with allocation of adequate financial resources from all development budgets.

Considering the significant financial damage caused by disasters, it is necessary to develop the disaster risk reduction strategy and disaster prevention preventive involving all necessary services. It should be noted that the below indicated problems relate to the district and affect all areas of economy.

## **Major disaster risk reduction problems in the district:**

- absence of financial resources in the budget for prevention/response to disasters and inefficiency of the disaster prevention system, including the absence of zoning of the territories exposed by exogenous geological processes to identify could help to reveal the most vulnerable territories;
- absence of hazardous zones maps of the district;
- nonworking disaster prevention and response mechanisms;
- absence of technical evaluation of the available housing facilities in the district
- absence of resources for systematic complex mitigation measures;

## **Disaster reduction goals and strategy:**

The main goal is integration of disaster risk reduction through the implementation of the structural and non-structural mitigation measures<sup>2</sup> with the purpose of readiness and response to disasters and emergencies, and allocation of financial resources from all development budgets.

It is important to actively involve people in disaster risk reduction process. It is necessary to make detailed examination of all layers of population and to analyze the degree of their poverty, to determine factors which influence the vulnerability of these layers, and to define measures in order to improve the situation; to develop and to analyze the existing legislation, instructions, bylaws, norms and procedures related to disaster reduction in order to the sphere of emergencies in order to develop a coherent action plan in case of emergency situation.

## **General recommendations**

1. Policy development on protection and preservation of the agricultural lands;
2. Purposeful utilization of resources (both local and subsidies) for the protection of the existing arable lands, as the main source of livelihood in the district;
3. Development of maps of exogenous geological processes in Ayni district with indication of their influence on the settlements;
4. Definition of priority mitigation works at the district level;
5. Development of the district disaster preparedness and response plan;
6. Improvement of organization of civil defense forces and means for disaster liquidation;
7. Determination of safe places for evacuation of people from disaster zones;
8. Conduction of planned exercises and trainings with civil defense services at the district local (jamoat) levels in order to maintain their constant preparedness.

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<sup>2</sup> Structural mitigation includes the construction of new buildings, roads, channels, dams and other objects of infrastructure, improvement and modernization of old structures.

Non-structural mitigation includes teaching, trainings, placement of signboards and warning signs, development of conditions, plans of land using etc.