



# THE EVALUATION OF SLOPES AND ASPECTS IMPACT ON THE OBSERVED RIVER FLOODS IN ARMENIA

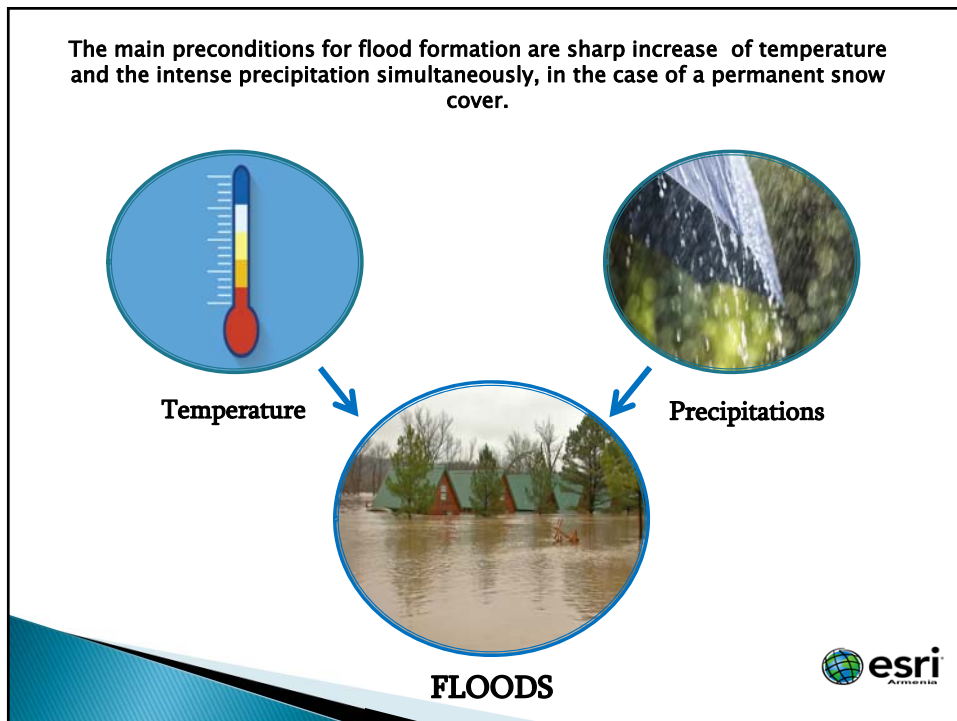
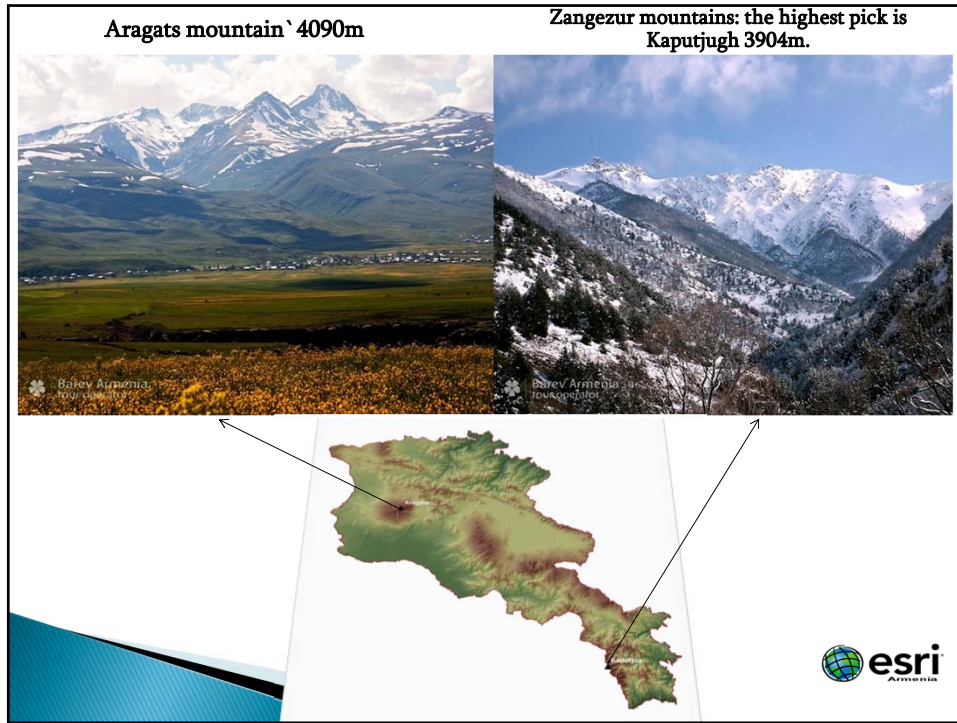
Ministry of Emergency Situations of Armenia,  
r/s lieutenant Artur Sargsyan

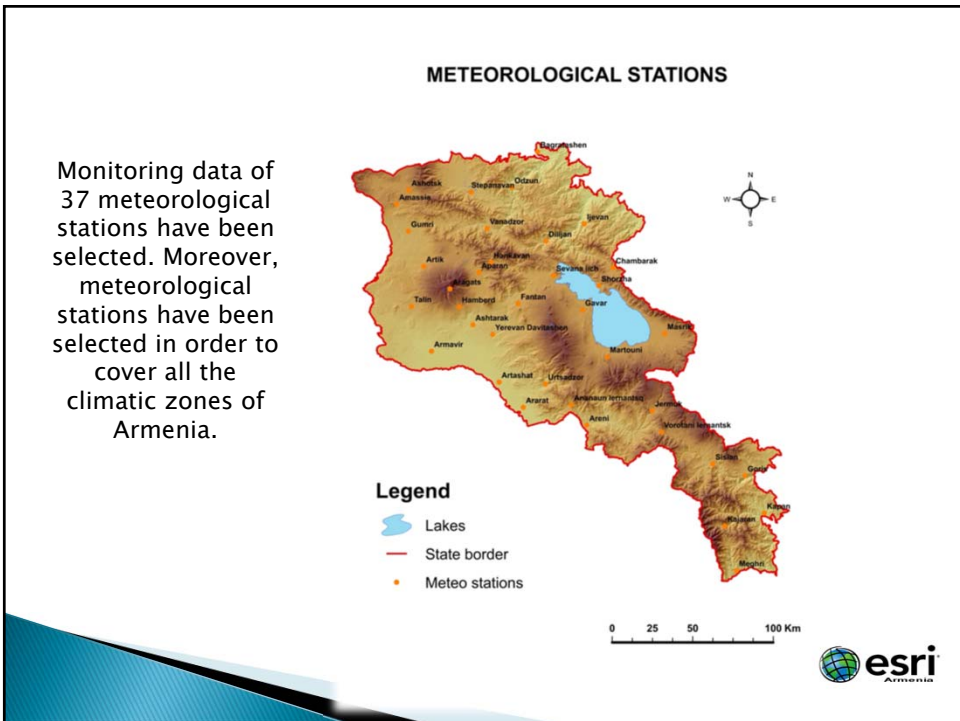
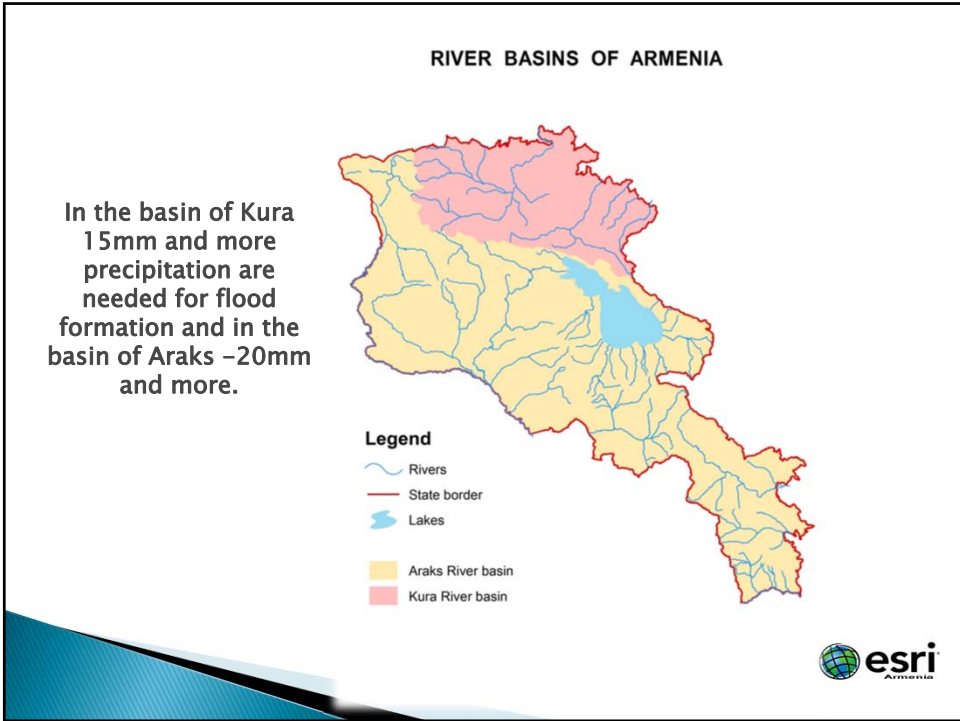



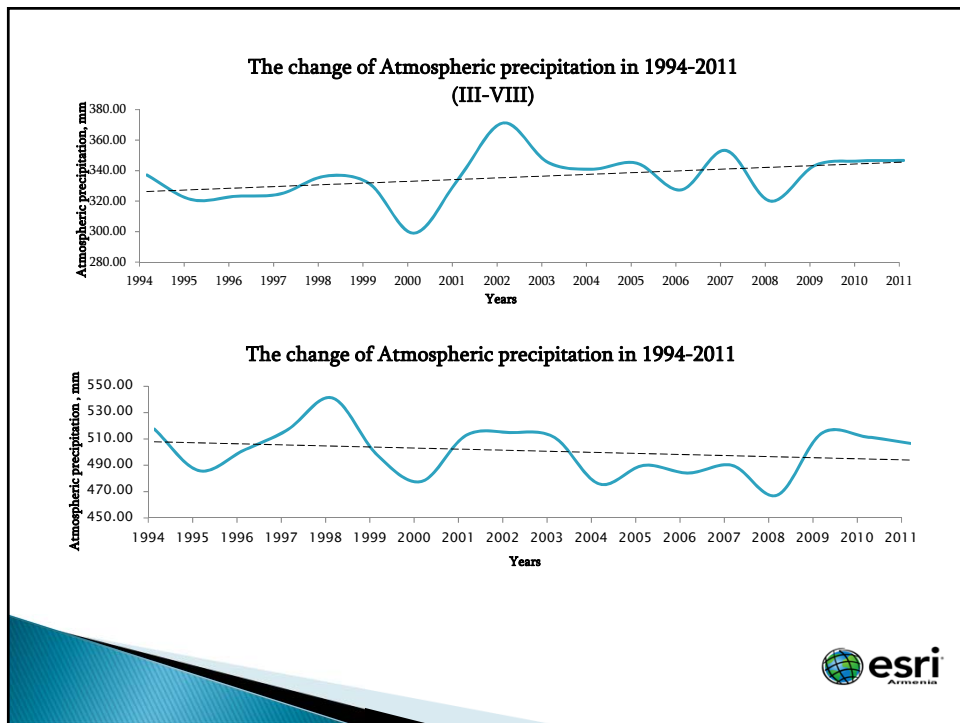
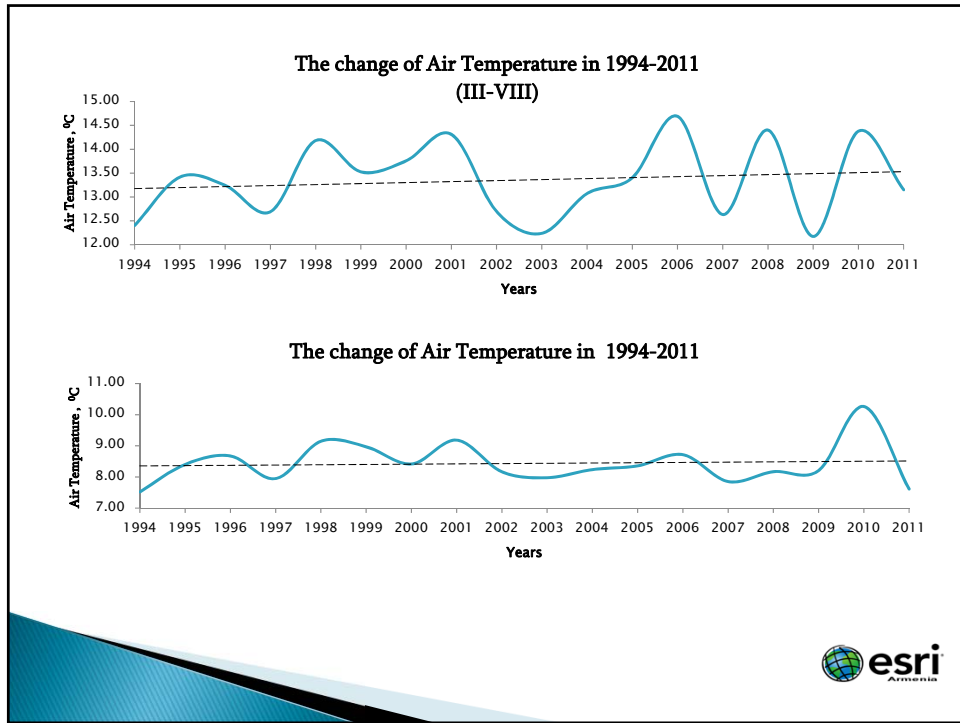
The Republic of Armenia is located in the northeast of the Armenian Highlands, at the border of Caucasus and Western Asia. The territory of the Republic of Armenia is 29.743 km<sup>2</sup>.

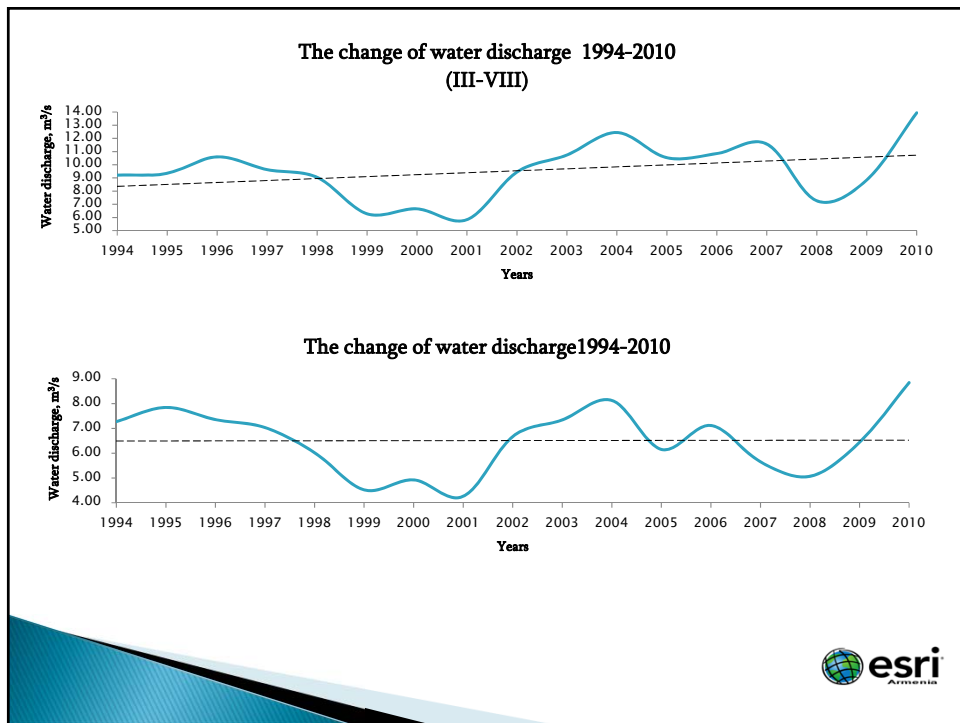
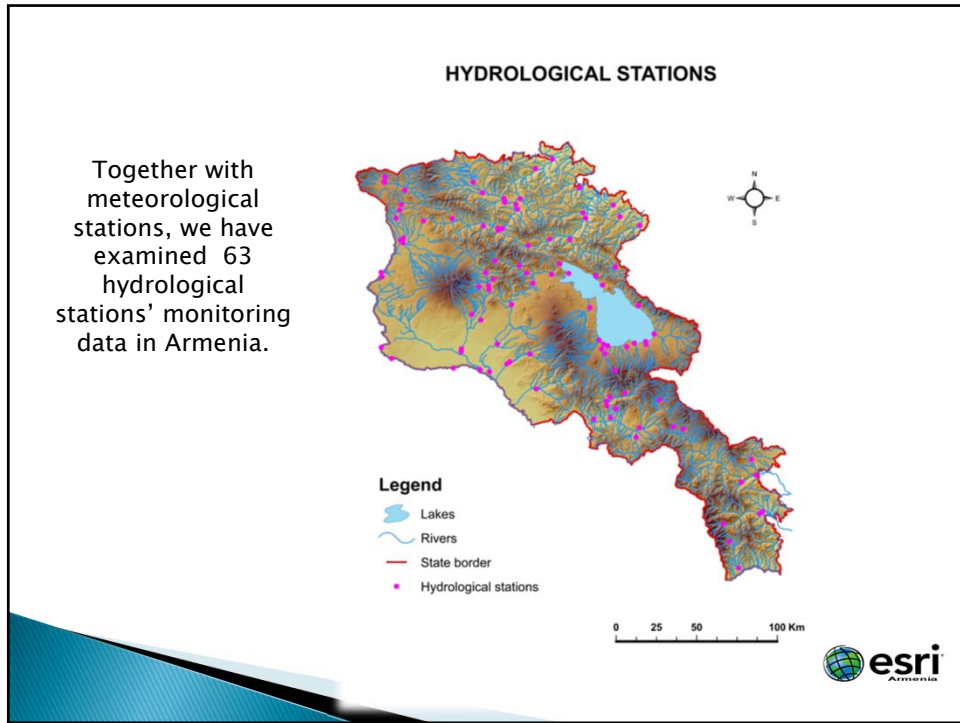
Armenia is a mountainous country: 76,5% of the territory has altitudes of 1000-2500 meters above sea level. The country's mean elevation is 1800 m a. s. l. with extremes ranging from 380 m a. s. l. to 4090 m a. s. l.











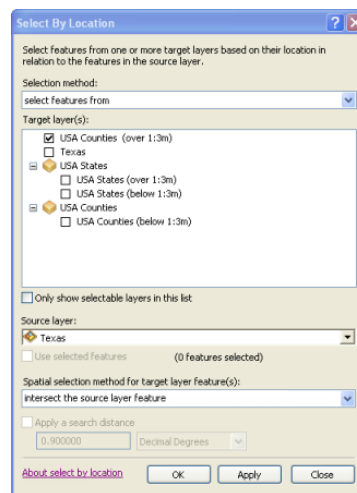
The observed floods in different river basins of 1994–2011

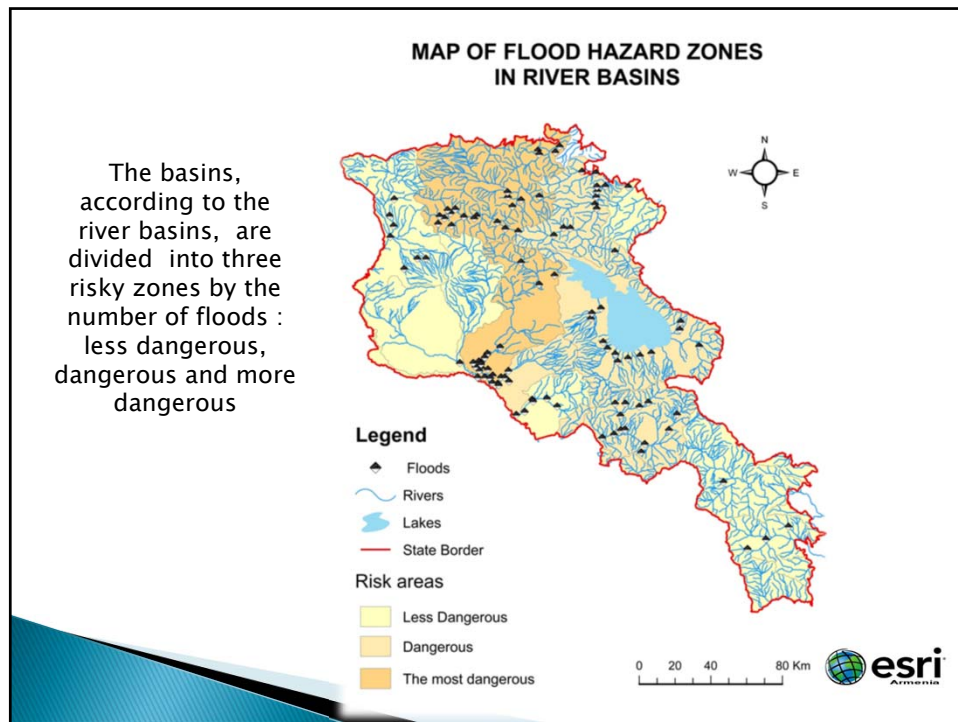
Nº	The Basin	Number of floods in river basin	The total number of floods	The number of floods expressed in the river basin in %
1	Azat	9	160	5,6
2	Akhuryan	6	160	3,8
3	Aghstev	17	160	10,6
4	Arpa	19	160	11,9
5	Debed	32	160	20,0
6	Tributaries of Kur	1	160	0,6
7	Hrazdan	47	160	28,8
8	Meghriget	0	160	0
9	Voghji	3	160	1,9
10	Vorotan	2	160	1,3
11	Selav Mastara	2	160	1,3
12	Rivers flowing into Lake Sevan	17	160	10,6
13	Vedi	6	160	3,8
14	Kasakh	0	160	0



Click **Selection > Select By Location** to open the **Select by Location** dialog box.

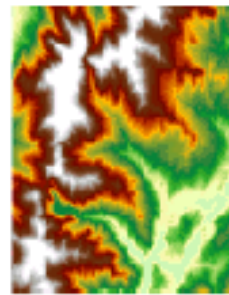
Applying this tool, we can distinguish how many floods have occurred in the river basins



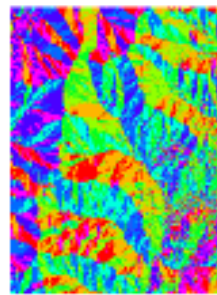


# THE SLOPES AND ASPECTS

Click Spatial Analyst Tools > Surface  
to open the Slope



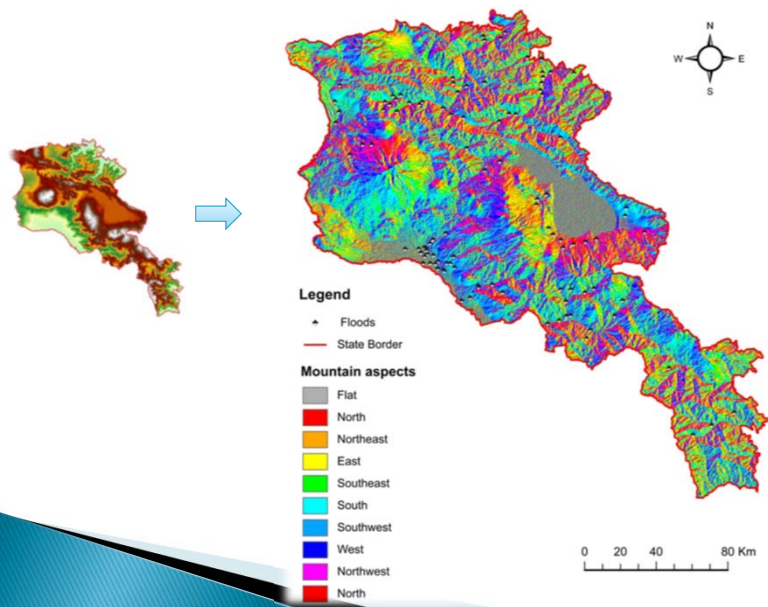
Input elevation raster



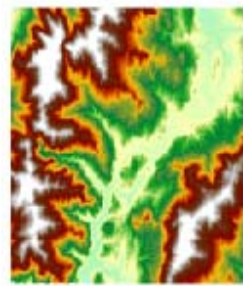
Output aspect raster



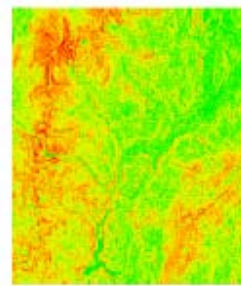
### MAP OF MOUNTAIN ASPECTS OF ARMENIA



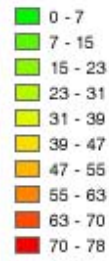
Click Spatial Analyst Tools > Surface  
to open the Aspect



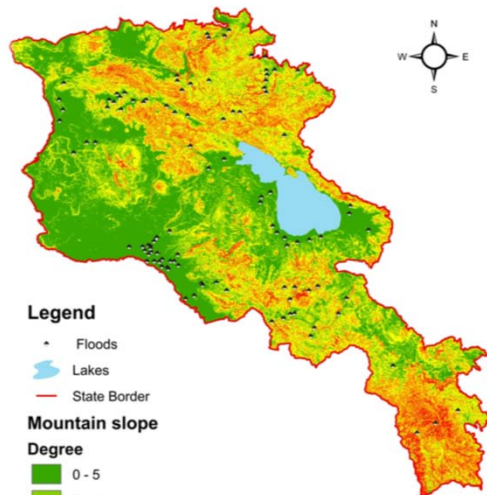
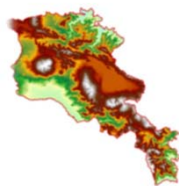
Input elevation raster



Output slope raster  
(in degrees)



### MAP OF MOUNTAIN SLOPES OF ARMENIA



### Number of floods by aspects

Nº	Aspects	The number of floods	The number of floods expressed in %
1	Flat	41	25,6
2	North	6	3,8
3	Northeast	14	8,8
4	East	20	12,5
5	Southeast	14	8,8
6	South	29	18,1
7	Southwest	10	6,3
8	West	6	3,8
9	Northwest	20	12,5
	Total	160	

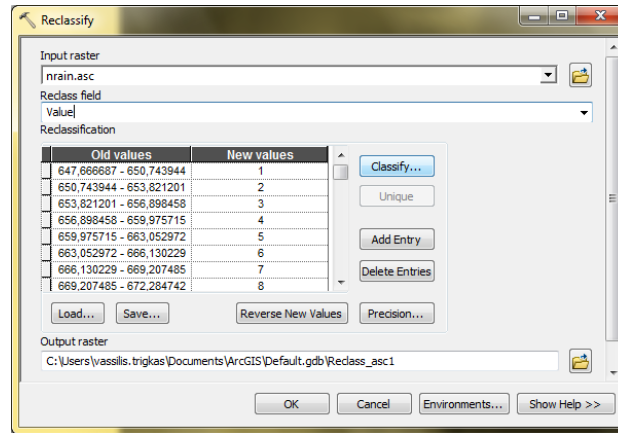


### Number of floods by slopes

Nº	Slopes	The number of floods	The number of floods expressed in %
1	Up to 5°	102	63,8
2	5° - 10°	35	21,9
3	10°- 20°	20	12,5
4	20° - 30°	3	1,9
5	More than 30°	0	0
	Total	160	



Click Spatial Analyst Tools > Reclass  
to open the Reclassify



THE POSITION OF FLAT AND SOUTHERN ASPECTS

The flat and southern aspects occupy 13,1% the territory of Armenia

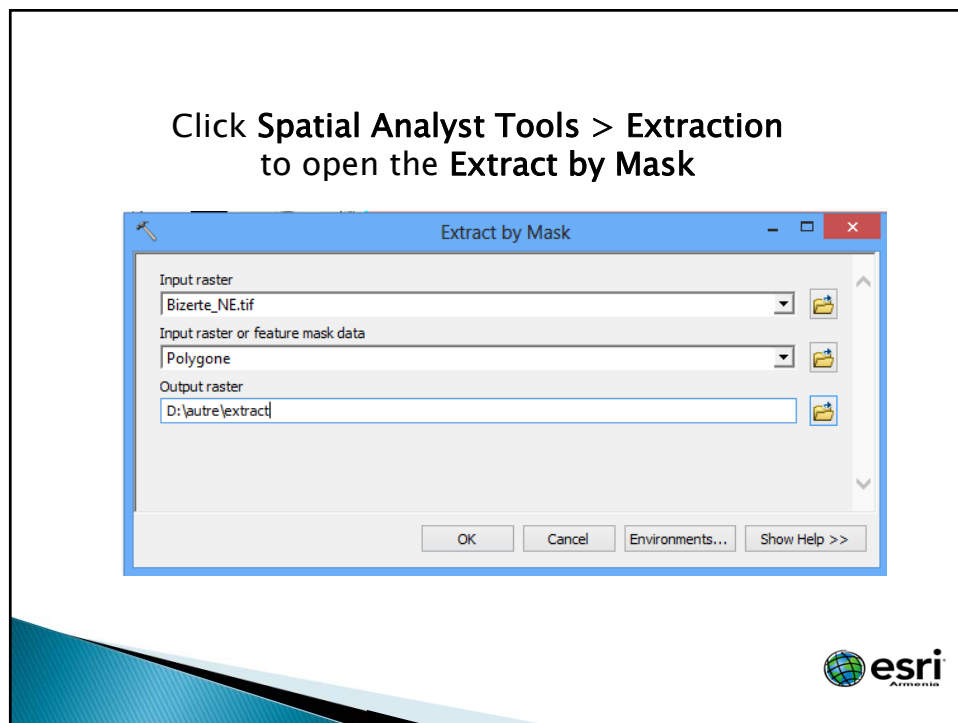
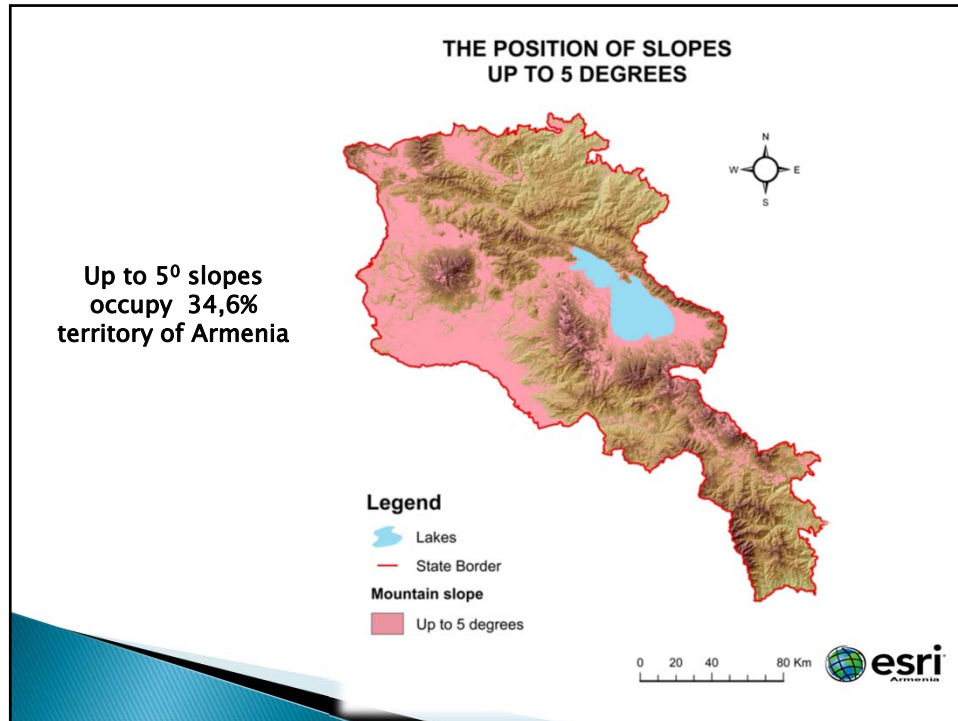


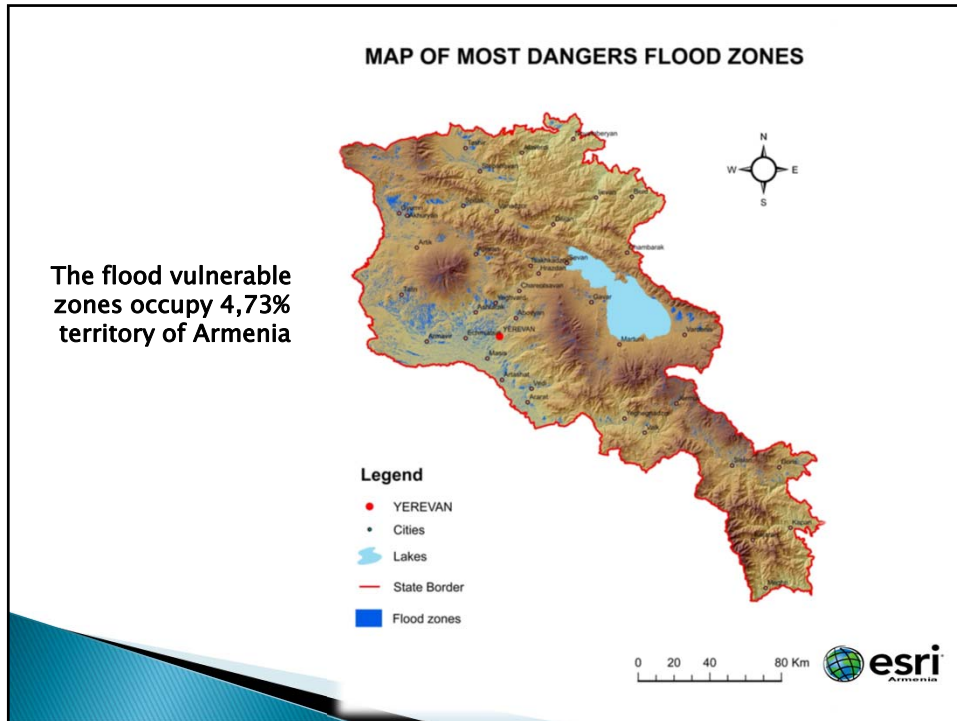
Legend

- Lakes
- State Border
- Mountain aspects**
- Flat
- South

0 20 40 80 Km







THANK YOU  
FOR ATTENTION

ขอขอบคุณ เพื่อความสนใจ

esri  
Armenia

# QUESTIONS ?

