lor a fost validată, a dat și aceasta rezultate pozitive, care vor suferi rectificări ulterioare.

Bibliografie

1. BELDA A., "Use of GIS to predict potential distribution areas for wild boar (Sus scrofa Linnaeus 1758) in Mediterraneanregions (SE Spain)", Italian Journal of Zoology, volume 79, Issue 2, 2012.

2. CHIRIAC SILVIU, "Potențialul ecologic și exploatarea biologică a ariilor protejate din județul Vrancea", teza de doctorat, București, 2008.

3. CHIRIAC S., IOJA, C., ROZYLOVIKS, L., SANDU R. Planul de management al Parcului Natural Putna-Vrancea, Raport în cadrul proiectului LIFE-05NAT/RO/000170, 2008.

THE AGRO-CLIMATIC ZONING WITHIN THE DNIESTER RIVER BASIN USING GIS TECHNOLOGIES

dr. hab. Maria NEDEALCOV, Tudor CASTRAVEȚ, dr. Tatiana ADAMENKO*

University of the Academy of Sciences of Moldova, Institute of Ecology and Geography, ASM, *Ukrainian Hydrometeorological Centre

Introduction

4. SILVIU CHIRIAC, RADU MIHAI SANDU şi alţii, "Plan de management PARCUL NATURAL PUT-NA VRANCEA"

5. URSU ADRIAN "Tranziții fizico-geografice în zona de curbură a Vrancei și influența lor asupra utilizării terenului", teza de doctorat, Iași, 2009.

Summary:

USING G.I.S. TO IDENTIFY POTENTIAL HABI-TATS OF SOME SPECIES OF MAMMALS OF THE PUTNA RIVER WATERSHED.

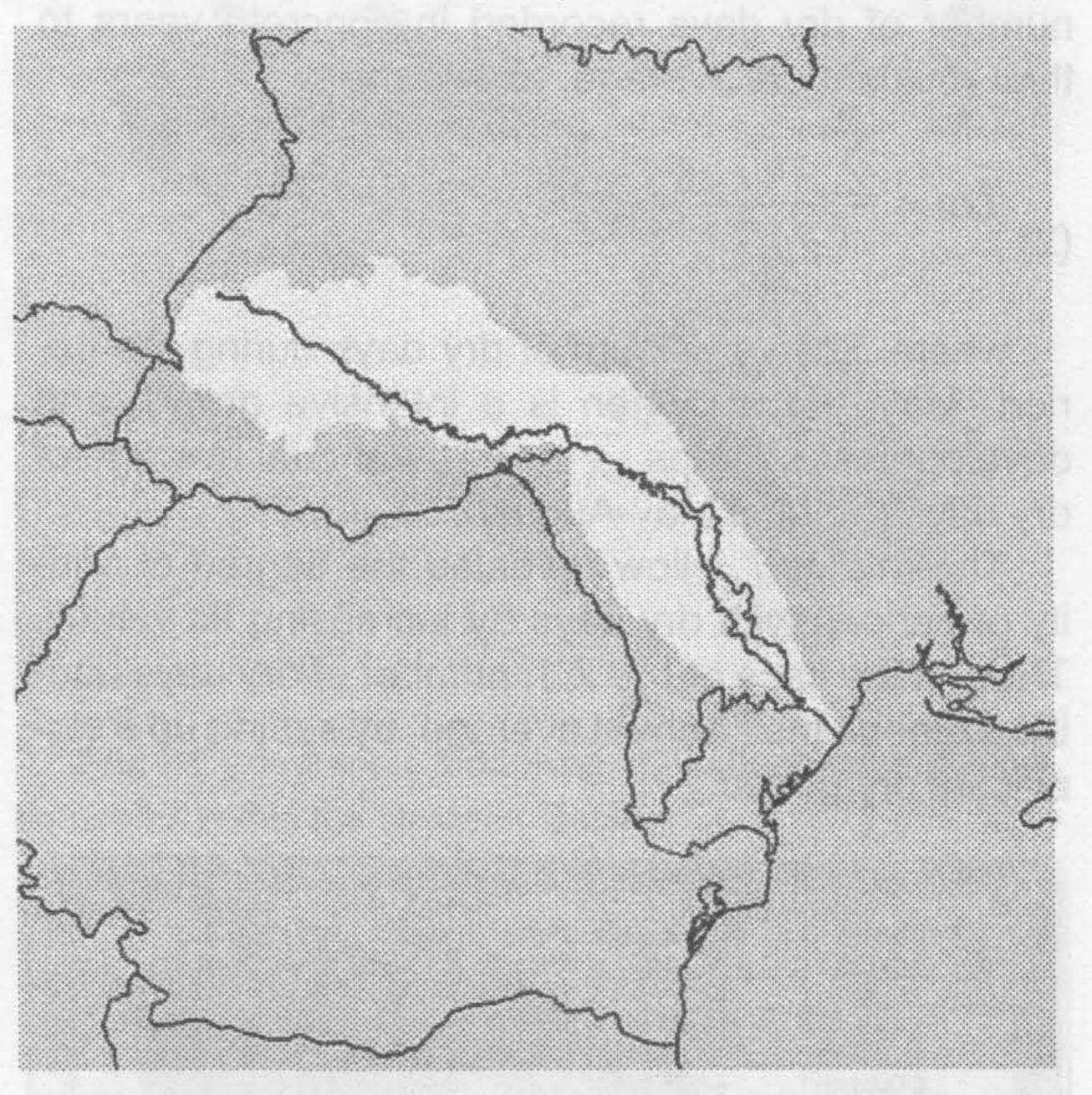
Authors: Adrian V. Ursu¹, Vasilică F. Istrate², Adrian F. Istrate³

¹ Lect. PHD. University "Alexandru loan Cuza" of laşi. Faculty of Geography and Geology

 ² PHD.stud University "Alexandru Ioan Cuza" of Iaşi. Faculty of Geography and Geology
 ³ Mast.stud. University "Alexandru Ioan Cuza" of Iaşi. Faculty of Geography and Geology

Concerning the degree of moisture and heat supply necessary for crops development, by the landscape character, the Dniester basin territory can be divided in 10 zones, agro-climatic regions, five of which belong to mountain and pre-mountain areas. This regionalization includes several steps and their generalization represents the final product. We note that such research for the study area is carried out firstly.

So the Dniester basin surface constitutes 68.627 km2 and the hydrographical basin area is 72.100 km2. The coordinates of the Source are 46°21'N 30°14'E and at the Mouth - 46°18'13.26"N 30°16'24.19"E. The difference in altitude represents 1.000 m (fig. 1).



Keywords: spatial niche, environmental requirements, suitability, GIS

This paper aims to identify ways of determining the specific habitats of several species of mammals by integrating five geographic physical variables in GIS TNTmips 6.9 software. The study area is in the upper basin of the river Putna. The animals for which were calculated the potential biotops are wild boar, bear, wolf and lynx. We used two methods for calculating the degree of suitability and the results are interpreted in the paper.

Fig.1 Map of the Dniester basin

Source: http://en.wikipedia.org/wiki/Dniester#me-diaviewer/File:Dniester_map.png

Initial material and research methods

At the first step in achieving agro-climatic regionalization, initially was created Information Data Base representing complex information regarding annual atmospheric precipitation regime, sum of active temperatures and the absolute minimum of the year, thus reflecting heat, moisture resources and winter con-

ations within the Uniester

ditions. If until recently in estimation the degree of aridity Seleaninov Hydrothermal Coefficient (HTC), as an appropriate indicator was used, the highly variable character of atmospheric precipitation regime over time denotes that its use at present does not adequately reflect the degree of aridity (eg. CHT in south-eastern part of the Republic of Moldova constitutes currently 0.9). But since World Meteorological Organization confirms the utility of Standardized Rainfall Index (SPI) in predicting droughts (formulated by Mc.Kee) its calculation has been made for particular years [3]. This index represents the equivalent of standardized anomaly of the random variable from climatic norm:

As an indicator of "dry days" is T of the air higher >25°C) and low relative air humidity (U<30%).

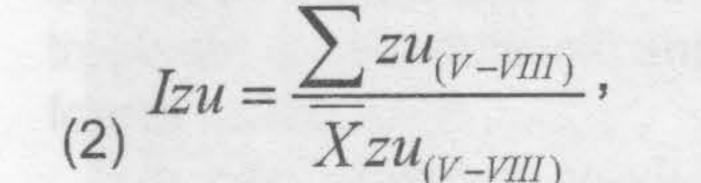
Therefore, using Geographic Information Systems [1] in the proposed researches, for the first time was developed agro-climatic regionalization of the territory included in the Dniester Basin, which includes the eastern territory of the Republic of Moldova and western Ukraine. Initially it was created the basis of Information Database in Microsoft Excel, part of Microsoft Office Professional (fig. 2).

As our experience demonstrates, this system is quite convenient for storage and use of climate information in tabular form. In addition, for the statistical processing of this information and presenting was also used spatial Statgraphics Centurion XV, and digital maps development-ArcGis Programme. As initial material for the study served multiannual data concerning atmospheric precipitation regime, the amount of active temperatures and absolute minimum from 20 meteorological stations within the Dniester Basin (11 stations from the territory of the Republic of Moldova and 9 - from Ukraine). The second step was to develop regression models that demonstrate the dependence of agro-climatic indices by absolute altitude of the territory, geographic latitude and longitude (fig.3, 4, 5).

SPI = (x - x)/s(1) (where x, and x represent the meteorological factual value and of climatic norm, s - standard deviation).

So, using SPI to assess spatial extremes, it enables to find out consecutive manifestation of some climate extremes outside the country and to use various regional and international Information Databases.

But the intensification of aridity process over a significant part of the Dniester Basin more and more destructive influence the main phases of ontogenesis, being the reason why and Dry Periods Index (Izu) was taken into account, an index proposed by M.Nedealcov [2], which is the ratio between the number of dry days recorded in concrete years to their multiannual average, expressed by:



Constant for	A100-38-X		(0) (4) (A) (A)	Serve Street and	0X.0X.0X.0X	ere:				a Plot
66666 15	8,386316395			Į					t Rasie	and P
deskeo R Sceleb	6,8223486872						sheeksteer	9 155-055	a 59 10	9 99 A
1993902991	201.3222-35535									(Rest
2002/00/00		÷		·····					0000000000	onespecto
02009			cter Printigers	in the second se				1010	ioek .	Philes I
*****	······	28	MAX BUNG		and the second		an a		10	000230800
659366		196,752 1	\$ 17.86						SQUE	KT.
26		10.000	*****		a second second	a, a, a, a, b, a,				501
	1.00000000	22200224	1.000 - CARLO	(¢			
001.001		388483.2		0.96310631368 5663	12.328.30 192	2848 15891100	in the second second	en generation of the second	harren f	
INVAC		6 655442 1	SHEEK STREET	1.0000758895	2.03(234 0.18	NER ASSESS				
		800000080		e galaxiesso	200000 20	TUKOLA NORTAN				
************************	000000000000000000000000000000000000000	0.000.000.000.000	COLD PROFESSION FOR DESIGNATION							DOUBDE-
****			and the second second	for the second second	i na					
				Same de la come						
E2000AL 0009907				20000000.01Y CM	incor					
200004_000900										
5000004. 00000000 	And 1016 200000	Mccalvactas	Constantia and a second	23	195.07 					
200004.000000 	1001.001.0016.01.001 1001.0016.01.001 5601.20018.01.017	Mccalvad 43 10.00005 0 14.46505 0	Concess JACSINA 20155C	23	19%(17 					
EDEDIDAL DAVIMAN SHARKSANS	******** Exercise 16 15 28 S467 2885812 15 2 S016,465 * (%E9k)	Mc.00000 93 10.00000 0 74.66509 0 74.66509 8	2000 2000 5 10 55 54 75 155 55 30 56 5 5	23 23 23 23 23 123	195.07 200207 20020 20020 20020 20020					
ESCORAL INVITAN SERVICENCE	**************************************	MCC000000 0 2000000 0 18.46500 18.550200 19.250200 1 20000000 1 2000000000000000000000	CCCCCC0005 JACS584 20155CC 205022 JIRL28 JIRL28	2000-201.11 Y CO.1 2000-201.11 Y CO.1 2000-2000 213 213 213 213 213 213 213 213	2902 2925 2925 2925 2925 2925 29452 29452					
2000004.0000000 	**************************************	MC 100 V100 00 10.00000 0 14.665505 0 96.73502 8 196.73502 8 196.7502 1 96.7502 1 96.55050 1	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	200000000 00000000 123 123 123 123 123 123 123 123	PUT <u> <u> </u> </u>					
	**************************************	Mccablood 45 20.00000 0 78.665709 9 96.732022 8 595.732022 8 595.6740 1 993.6740 1 993.6740 1 593.90050 9	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	23 113 113 113 113 113 113 113 113 113 1	1900 2000 2000 2000 2000 2000 2000 2000					
	**************************************	Accesses 2000025 2000025 24,66509 24,66509 25,5650 25,5650 200,6746 200,6745 200,7308 36,73088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088 36,75088	Corressons DCSS84 201550 205022 2119128 238458 214625 215022 150025 258250	2000-2001 INY COU 2000-2000 2000-2000 200 200 200 2	19407 2955 2955 2955 2955 2955 29562 29162 29162 29162 29162					
	**************************************	Mecoblock 45 20,00065 0 78,66509 6 96,23002 8 595,3405 1 900,6746 1 900,6746 1 98,59050 0 251,5903 2 36,73088 0 7,566(94 0	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	233 244 250 250 250 250 250 250 250 250 250 250	2000007 20000 2000 2000 2000 2000 2000 2000 2000 2000 2000					
	**************************************	Xscobbook 95 10.20005 0 74.46509 0 74.46509 0 75.46509 0 100.4644 1 00.90050 0 100.7008 0 7.564094 0 40.0000 0 40.0000 0	Coccess JUCSS84 2015555 205022 119128 238855 216525 12605 12605	23 500.0000 500.0000 51 51 51 51 51 51 51 51 51 51 51 51 51	19507 2955 2955 2955 2955 2955 2955 2955 295					
	**************************************	Mecoblock 20100050 2010050 201000 201000 2010000 2010000000000	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	2000 2000 2000 2000 2000 2000 2000 200	PCT 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000					
	**************************************	Microbiologia 20.00000 0 74.66509 9 96.735022 8 196.735022 8 196.75020 2 96.75020 2 96.75000 2 96.75000000000000000000000000000000000000	COCCERCIANS JUCSS344 20155C 305022 JURIDR 205022 JURIDR 205022 JURIDR 205022 JURIDR 205022 JURIDR 205022 JURIDR 205222 LITIS25	23 50000000 50000000 51 51 51 51 51 51 51 51 51 51 51 51 51	1907 2955 2955 2955 2955 2955 2955 2955 295	Entrance			<u></u>	
	5/263, 4290, 345 3450, 9980,9624,44 2193, 40304695 2208,63364791,70 3059, 999734,8223 3380, 220582,8239 2913,855550,8998 2822, 66346536213 5625, 79520,0923 336-1,300,6322,460	\$90,6746 1, 56,59352 2, 5,35,73686 3, 7,556596 0, 6,40,556596 0, 6,40,556597 0, 6,40,556597 0, 6,40,556597 0, 6,40,556577 0, 6,59,18232 8, 1,25,56577 0, 6,259,35955 6,598,25532 1,	238963 216275 196015 196015 188968 276325 406134 597275 238522 1.57325 201435		TUP TUP 2000 2000 2000 2000 2000 2000 2000 20	Entrance			<u></u>	
	5023,40290344 3400,09903628444 2190,40306455 22294,633647037 3009,4047364220 3380,2205226029 2613,6835503655 2622,6453655433 3663,20001082 3663,00001082 3663,00001082	\$90,6746 \$90,6746 \$90,90357 \$251,593 \$36,73086 \$ \$36,73086 \$ \$36,73086 \$ \$36,73086 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	238963 216211 306019 3882888 466134 597270 238522 1,11328 301430 59222							
	5023,4090,997 3450,0986,868,444 2193,451046852 2276,6335619317 3007,904796-8223 3380,22056,6539 2913,65353338999 2827,66346536213 5625,79590,0928 3363,00530516853 2982,8460876853 2468,60051635	900,6746 1, 088,90050 2, 0,057,5603 2, 0,057,5603 2, 0,0566,960 0, 0,0566,960 0, 0,0566,960 0, 0,052,0603 1, 0,052,0832 1, 0,050,0832 1, 0,050,0832 0, 0,050,0832 0,	238963 216211 306019 3882888 466134 597270 238522 1,11328 301430 59222							
2 4 4 5 4 1 4 1 4 4 1 4 4 4 4 4 4 4 4	5023,40290344 3400,0990362444 2190,40096352 22294,633647037 3009,4047364220 3380,2205226029 2613,68355303660 2622,6453653633 3603,700000220 3363,30000226655	900,4746 1, 080,90360 0, 0,001,5903 2, 06,70,086 0, 0,0566,096 0, 0,0566,097 0, 0,0566,097 0, 0,0566,007 0, 0,0566,007 0, 0,0566,007 0, 0,0566,000 0, 0,057,000 0,000 0, 0,057,000 0,000 0,000 0,000 0,000 0,00000000	238963 216211 306019 3882888 466134 597270 238522 1,11328 301430 59222			Entrance				

 $Xzu_{(V-VIII)}$

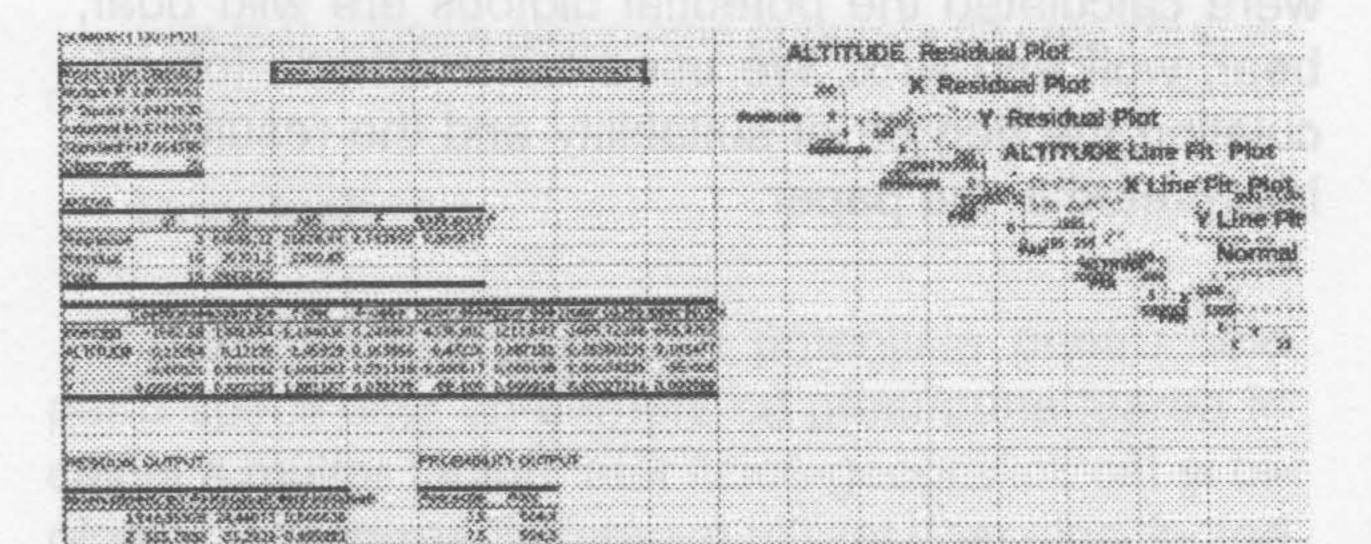
18

where Szu (V-VIII) - sum of dry days during the period (May-August) when is a intensive growth and development of crops, Xzu (V-VIII) - annual average of dry days (months May-August).

The ratings I, allow revealed the degree of aridity of periods with dry days by increasing its values. Thus, in the case of $I_{21} = 2.1$, number of dry days double exceeds their annual average, by setting up a significant dry period.

O	STATION	ALTITUDE	×	¥	SLAMAT	PAN	MINABS	ORIG_FIC
	0 Bravices	80,5	808585,8	5247527	3313,3	574,3	-21,2	0
	1 Baltata	79	854837.2	5213330	3332,8	504,4	-20,5	i1
	2 8att	103	571222,4	5281688	3253,7	504,8	-21,5	1
	3 Camenca	38,3	827810,5	5322380	3189	538,5	-21,1	3
	4 Chisinau	172	640589,1	5203676	3444,9	548,2	-18,8	4
8	5 Dutasari	41	881024,1	5238537	3487	511,7	-17.8	6
	6 Falesti	160,3	553001.9	5270240	3371	688,7	-18,4	
	7 Rabrita	97	851058,5	6292974	8257,8	523,1	-18,7	
1	8 Soroca	171	587484,2	5339184	3069,1	548,5	-21,1	
	9 Stefan Vox	171	703320,7	5158118	3349	540,8	-17,7	1
	10 Teaspol	38	898955,3	5183474	3458,5	509,1	-19,4	11
	11 Dragobyc	275	250748.1	5473893	2405	754	-24	1
	12 LVIV	319	281560,1	5521847	2600	721	-20,8	1
	13 Slavskoe	582	239587,4	5416860	2053	509	-26,9	t:
	14 Novadnes	241	533187,8	5381228	3825,7	601	-19,7	1
	15 Nov Usita	292	518895,6	5409918	2744,5	649	-21	1
	16 K. Podolsi	217	471187.5	5393440	2818,2	832	-2	1
	17 Mt. Padols	77	557848,8	5386613	3058,7	591	-20,8	الرائي في في الرائي في التي في التي التي التي في في في الرائي ال
	18 Zatishie	193	717833,8	5246239	3218	504	-18,3	11
	18 Razdelna	148	734107,8	5193075	3955,9	503	.17,1	1

Fig. 3. The regression model of the amounts of active temperatures within the Dniester Basin



2322

5492

42.5

614

65.8

975

417, 145, 16 47, 00224 L SECO 222,55678-27,45675-5,28368 exacted algebra and the

1222-51112 12,38865 9,239-988

\$1557,32228 34,31228-01.193080

3554,22233-35302222-3.589080

02872(59500 97,58555 6,888333)

1.210.550580-7.300003-0.400479

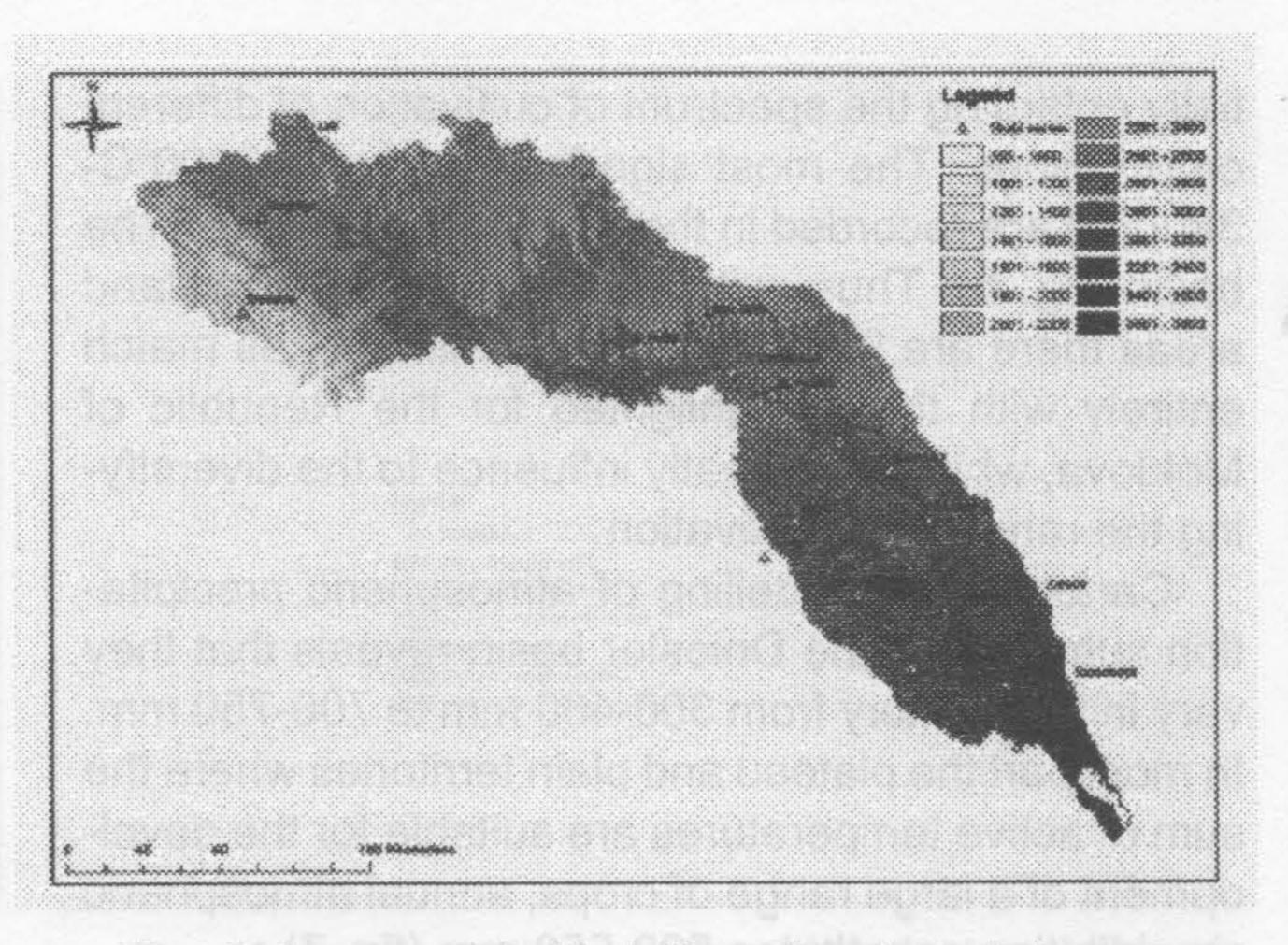
2454,24029, 55,80072, 2,55,279 13 450,2084 20,8932 3,712888 \$281,52800 S2.5596-2.147925 EX55,23849 8,742238 0.293262 12 455.3209 BL2081 L18883 15-222.59999 18,089999 9,081178 180635-328807-311,208227-3,499357

1512 2020 - 10 10 10 24

Fig. 2. Annual average (1980-2013) concerning atmospheric precipitation regime, the amount of active temperatures and of the absolute minimum from meteorological stations within the Dniester Basin

Fig. 4. The regression model of the annual amounts of atmospheric precipitation within the Dniester Basin

The values of the coefficient of determination R² indicates, as usual; the independent variables (absolute altitude of the territory, geographic latitude and longitude) included in the model explained by percent the variability agro-climatic indices, so the dependent variable). At the same time with coefficient of determination value, the level of significance of the pattern as a whole is seeks, and the meaning of each independent variable included in the model. If the significance of these values exceeds the level of credibility then given variable is excluded from the pattern. In this context, is used multiple regression analysis, gradually excluding and including variable. Therefore, the determination coefficient values for the regression model of amounts of active temperatures is quite significant and constitutes 0.93. And each physical-geographical factors included in the model that demonstrate as well the interpolation quality varies between significance level P from 0.0003 absolute altitude to 0,1- the geographic latitude (fig. 3). The values of the determination coefficient for the regression model of amounts of atmospheric precipitation constitutes 0.65 which shows that the correlation coefficient is less than 0.8, showing as well the quality model. And each physical-geographical factor included in the model and the significance level P values are from 0.07 geographical longitudes to 0.29 - geographic latitude (fig. 4).

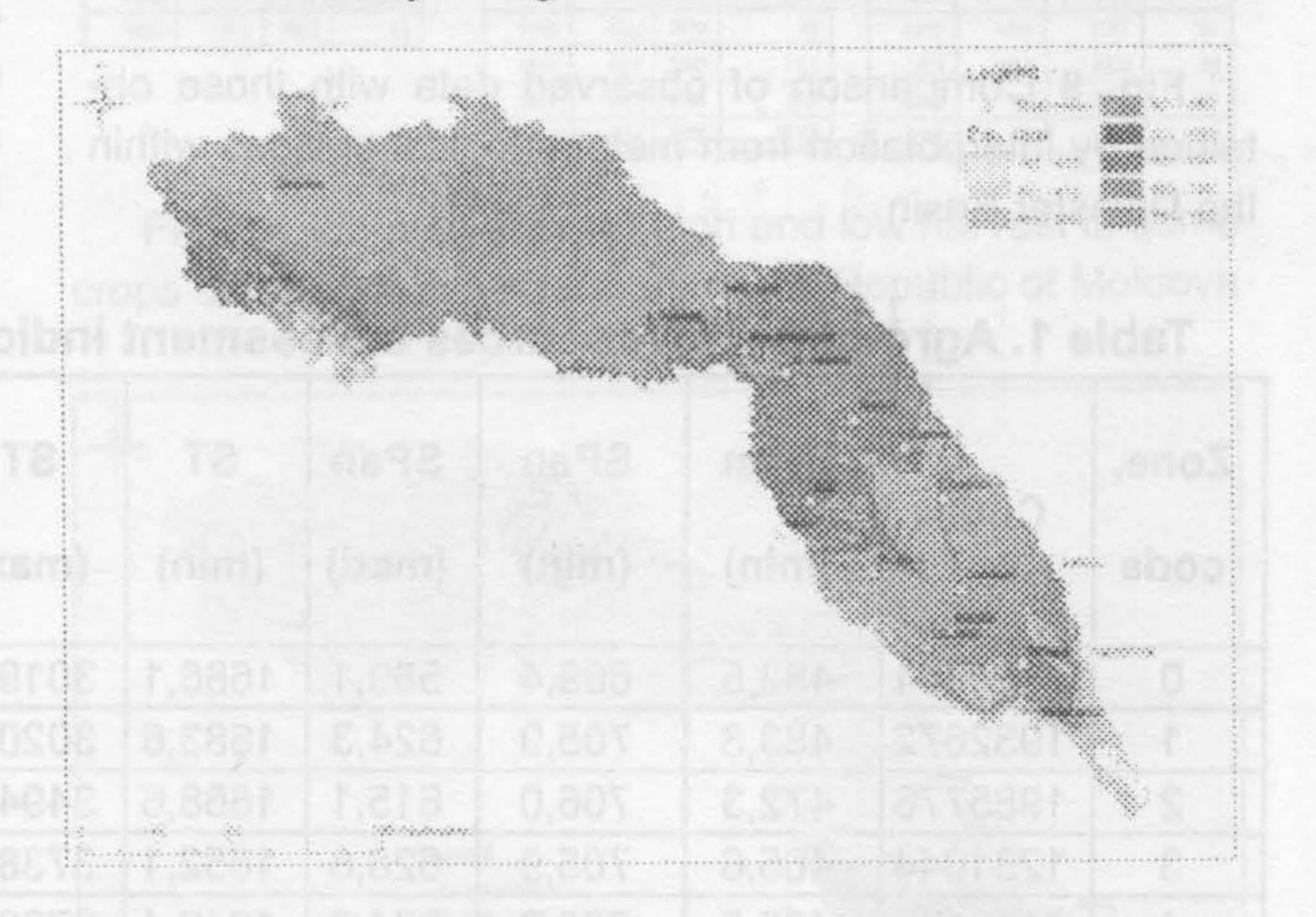


The absolute altitude significance level is higher than that of geographical latitude and it is 0.1.

Fig. 6 Cartographic Modelling of active air temperatures sums within the Dniester Basin

characterize these resources allows emphasizing regional particularities in the context of climate change. Thus, for the first time was obtained regionalization agro-climatic resources within the Dniester Basin, studies necessary to ensure the development of sustainable agriculture within the region.

Spatial distribution of active temperatures sums varies between mountain and pre-mountain territories from 800 to 2600°C. Within plateau and lowland areas they range from 2700-3800°C, essen-



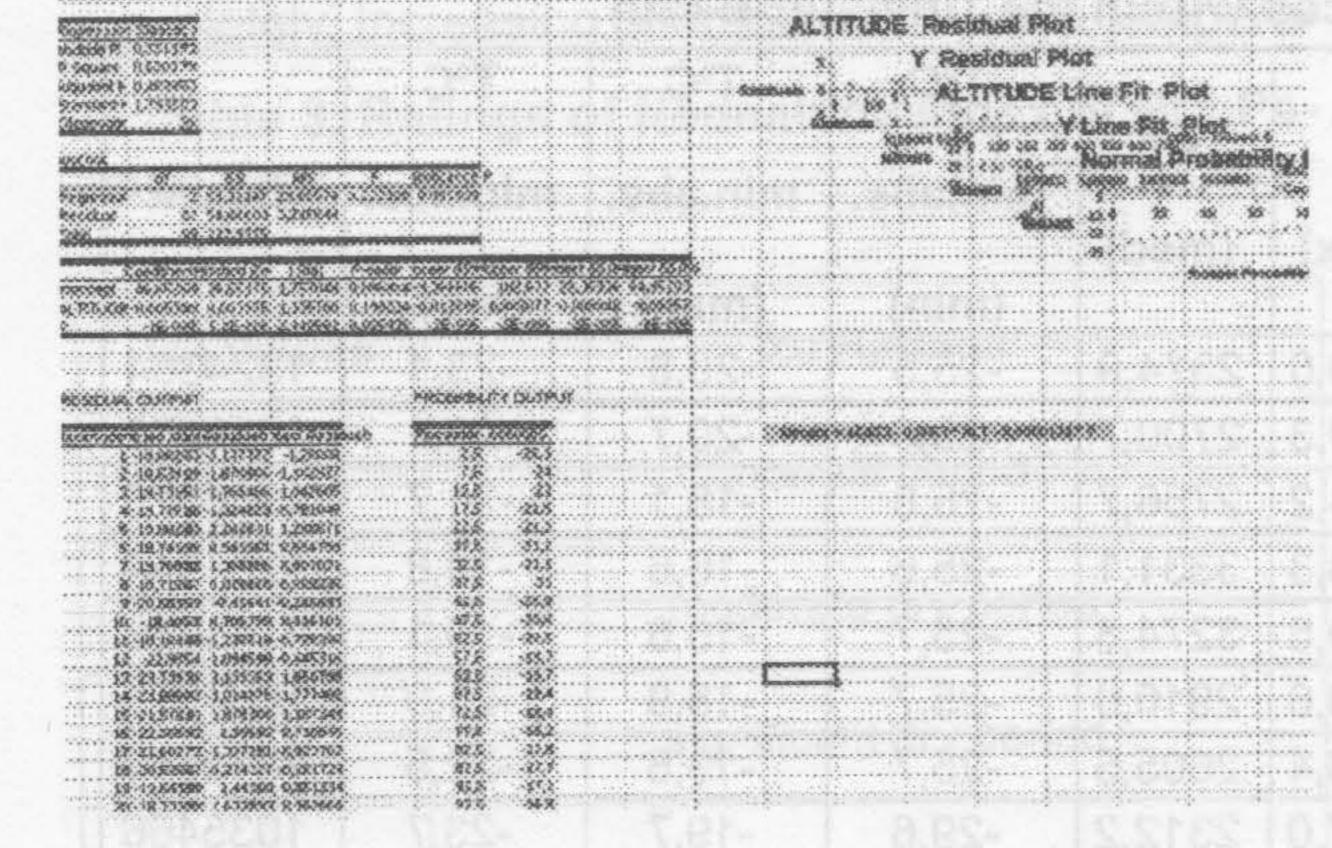
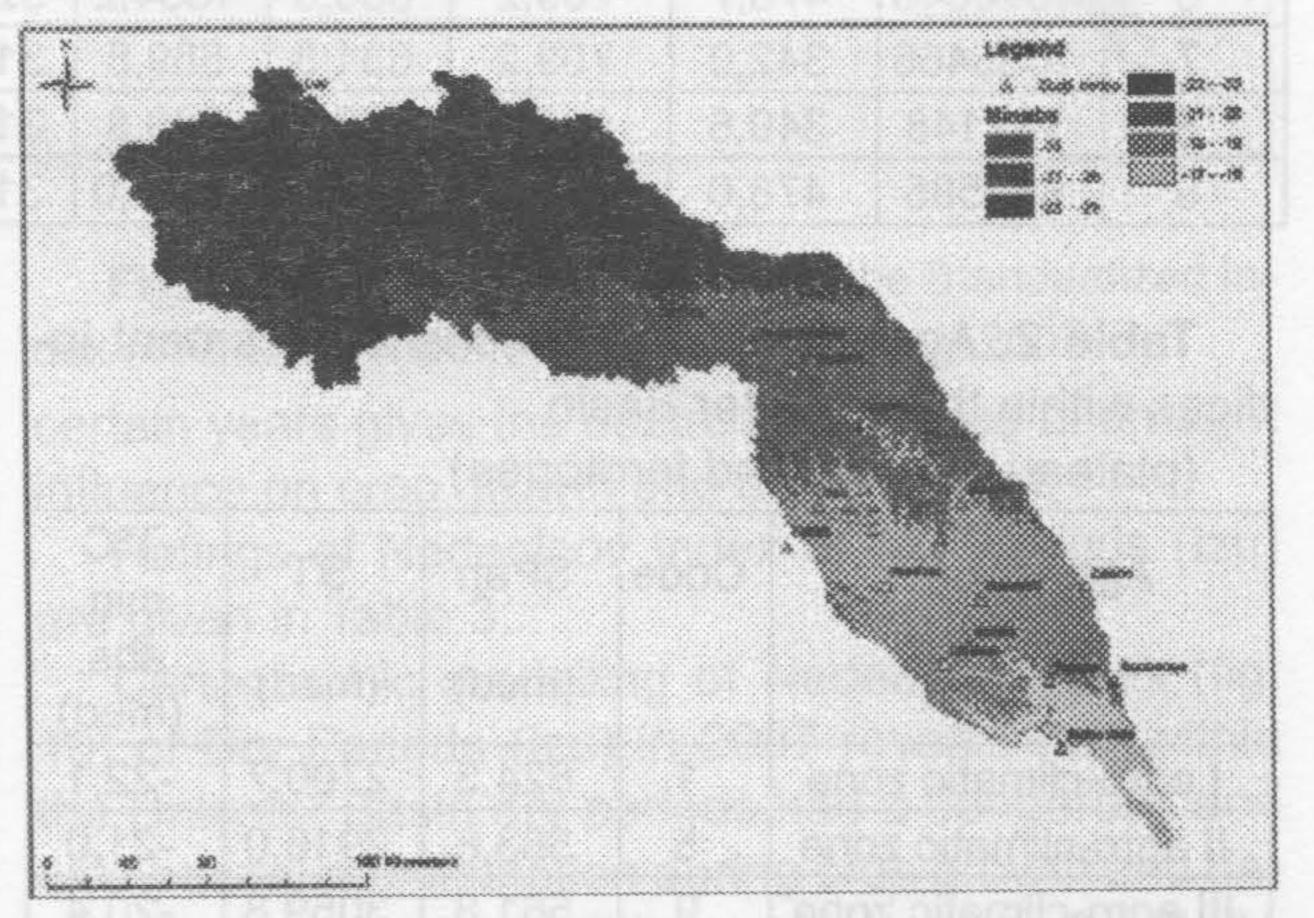


Fig. 5 The regression model of the average of the absolute minimum within the Dniester Basin

The values of the coefficient of determination for the regression model of absolute minimum of the year constitutes as in the previous case 0.52 which shows that the correlation coefficient is equal to 0.77 explaining also the quality of the proposed model. The values of significance levels P are from 0,02- geographical longitude to 0.1 - absolute altitude (fig. 5). Fig. 7 Cartographic Modelling of atmospheric precipitation sums within the Dniester Basin

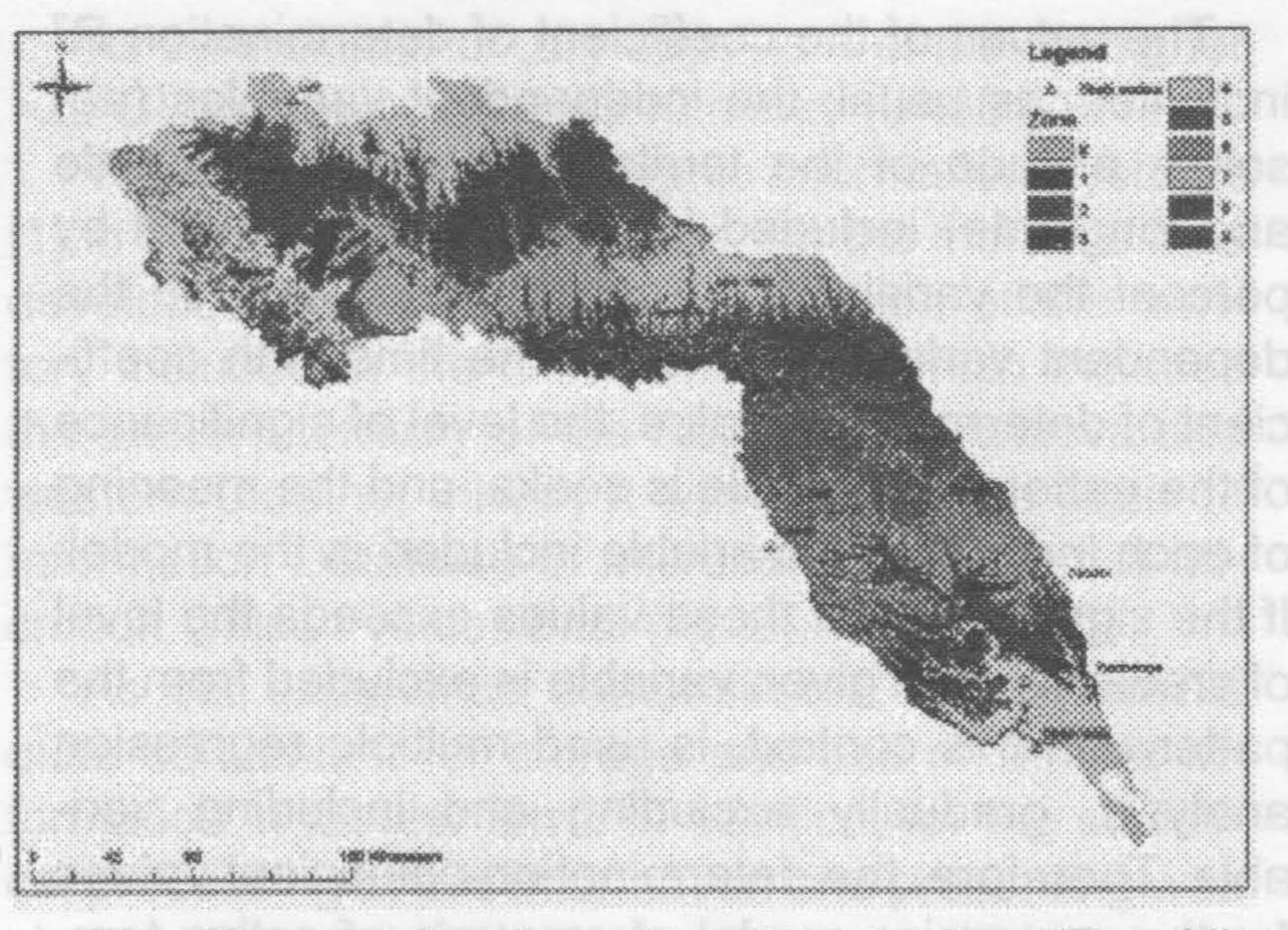


Analysis of the obtained results

The third step was to develop map models which were further at the basis of automatically agro-climatic zoning. Cartographic Modelling of indices that

Fig. 8 Cartographic Modelling of the absolute minimum of the year within the Dniester Basin tially enlarging the spectrum of cultivation of different crop groups. The most significant values (3600°C-3800°C) are recorded in the extreme southeast of the basin (fig. 6). Thus, within the plateau and lowland areas there are 900°C and spatial differences match entirely with those highlighted for the Republic of Moldova, which can greatly influence to the diversifying the range crop cultivation.

Cartographic Modelling of atmospheric precipitation sums within the Dniester basin reveals that they vary in the territory from 300-400 mm to 700-750 mm. In most part the plateau and plain territories where the sum of active temperatures are suitable for the development of a large range of crops, annual atmospheric



precipitation constitutes 500-550 mm (fig. 7).

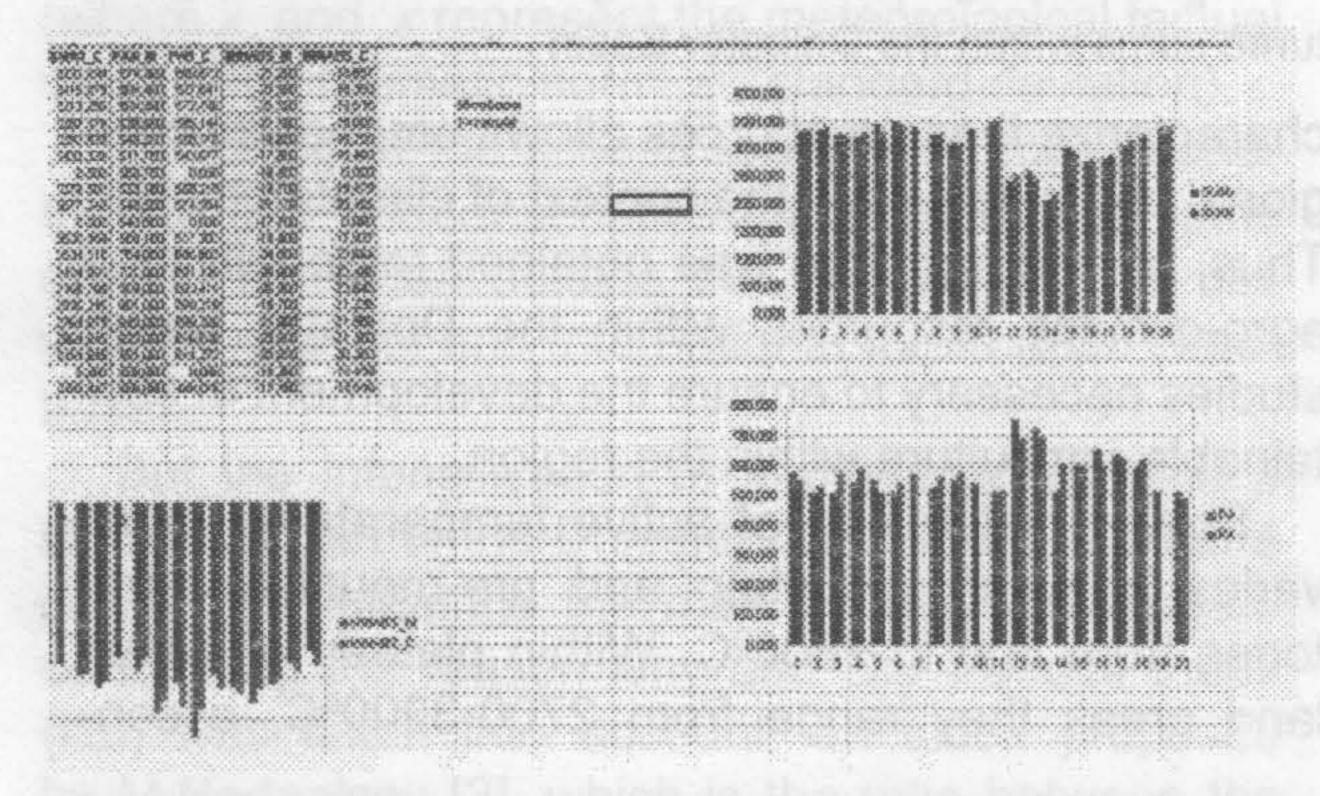


Fig. 9 Comparison of observed data with those obtained by interpolation from meteorological stations within the Dniester Basin Fig. 10. Agro-climatic zoning of the territory (Republic of Moldova and Ukraine) included within the Dniester Basin

One of the main indicators of the wintering conditions is the absolute minimum of the year because its values characterize favourability multiannual crops wintering. Thus, in intermountain depressions, the average of the absolute minimum of the year calculated for the period 1980-2013 ranges from -28...-24°C, in mountain and pre-mountain regions it constitues -23...-21°C, and within plateau and plain regions this agro-climatic index constitutes -20...-16°C (fig. 8).

Comparing data obtained from cartographic modelling and those observed (fig. 9) essential differences are highlighted, indicating that these models are useful in further agro-climatic regionalization of Dniester Basin.

Thus, in the piedmont and mountains, and plae-

Table 1. Agro-climatic resources assessment indices within the Dniester Basin

Zone,		SPan	SPan	SPan	ST	ST	ST	T⁰C	T⁰C	T⁰C	
code	Count	(med) (min)	(max)	(med)	min.abs. (min)	min.abs. (max)	min.abs. (med)	Count			
0	1324364	483,5	669,4	589,1	1686,1	3019,0	2374,9	-25,5	-20,8	-23,1	1324364
1	1932672	483,8	705,9	624,3	1683,6	3020,3	2700,7	-25,5	-20,7	-22,1	1932672
2	1985776	472,3	706,0	615,1	1668,6	3494,2	2756,7	-25,6	-18,1	-21,7	1985776
3	1231044	465,6	705,9	526,8	1652,1	3738,3	3331,1	-25,6	-16,6	-18,8	1231044
4	1143072	465,5	706,0	534,9	1640,1	3739,6	3274,8	-25,7	-16,6	-19,1	1143072
5	1864971	473,5	705,9	583,8	1620,1	3348,6	2916,0	-25,7	-18,9	-21,0	1864971
6	1810648	478,7	709,2	630,9	1634,2	3226,4	2605,5	-25,7	-19,6	-22,5	1810648
7	1035466	342,0	709,2	631,3	589,8	3197,0	2312,2	-29,6	-19,7	-23,7	1035466
8	787148	340,6	638,7	550,4	589,8	3189,3	2784,4	-29,6	-19,8	-21,4	787148
9	662585	476,0	637,8	561,8	2851,0	3187,4	3059,8	-20,9	-19,8	-20,4	662585

 Table 2. Agro-climatic resources assessment in

 dices within the Dniester Basin

(plataou and lowland tarritorias)

aus and plains areas each respectively define 5 agro-climatic districts. The mountain and piedmont is expressed by numerical codification 0, 8,7,2,6 and the rest of the territory namely plateau and plain territories - by numbers 1, 5, 9, 4, 3 (tables 1, 2, fig. 10). So agro-climatic zoning of territory (Republic of Moldova and Ukraine) included in the Dniester Basin delimits the plateau and plain areas following agro-climatic zones or districts (fig. 10):
I agro-climatic zone (code 1)- is characterized in the territory by the sum of active temperatures

(plateau	anu	IOwianu	lemior	165)
11				

Agro-climatic	Code	SPan	ST	T⁰C min.
zoning		(med)	(med)	abs. (med)
I agro-climatic zone	1	624,3	2700,7	-22,1
Il agro-climatic zone	5	583,8	2916,0	-21,0
III agro-climatic zone	9	561,8	3059,8	-20,4
IV agro-climatic zone	4	534,9	3274,8	-19,1
V agro-climatic zone	3	526,8	3331,1	-18,8

20

2700 °C, 624mm - sum of annual atmospheric precipitation, and the average of the absolute minimum of the year -22,1°C.

Il agro-climatic zone (code 5)- is character-. ized in the territory by the sum of active temperatures 2916 °C, sum of annual atmospheric precipitation of 584mm and the average of the absolute minimum of the year -21,0°C.

III agro-climatic zone (code 9)- is characterized in the territory by the sum of active temperatures 3060 °C, sum of annual atmospheric precipitation of 567mm and the average of the absolute minimum of the year -20,4°C.

IV agro-climatic zone (code 4)- is character-. ized in the territory by the sum of active temperatures 3275 °C, sum of annual atmospheric precipitation of 535mm and the average of the absolute minimum of the year -19,1°C. V agro-climatic zone (code 3)- is characterized in the territory by the sum of active temperatures 3331°C, sum of annual atmospheric precipitation of 525 mm 567mm and the average of the absolute minimum of the year -18,8°C. Therefore, only the change in heat resources in this region, will contribute to the movement of thermal optimum for cultivation, which will carry along to northward thermophilic crops cultivation. Thus, as the risk zone of growing late varieties of vines, peach, cherry, apricot has changed (3500°C), which will contribute to optimal growing area movement to the north, and for certain crops such as maize (2200-2700°C), sunflower (1850-2300°C), the risk zone may disappear completely. Increasing of amounts of active tempera-

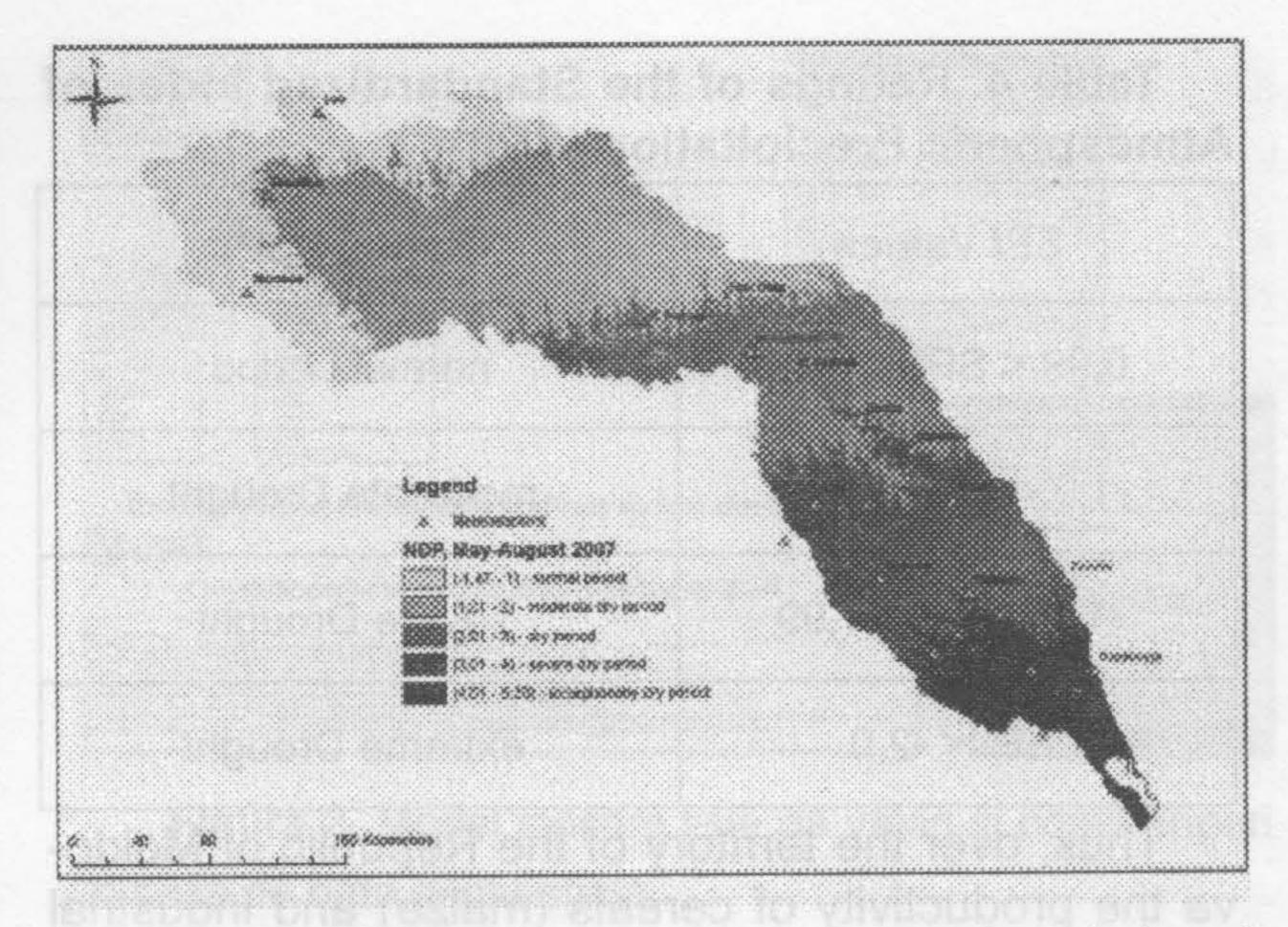


Fig. 11. Cartographic modelling of Nedealcov Index of Dry Periods (Izu) in the year 2007 (May-August)

> The top 10-year with high and low yields (q / ha) on crops under study and record (1960-2012) in the Republic of Moldova

> > sunnower

1960-3713

23 3 29

307 2888

200 3997

20.6 1984

125 2303

128 1978

183 2003

185 2004

181 3002

1985

22.2 8

Recolta

13,1

\$27

33,3

12,1

122

12,*

Recon

winter wheat

Ands	Receita	And	BREGIO
1958	\$2.4	2005	
1289	43.5	1964	8.3
1890	\$13	1863	13.8
1973	42.5	2007	
1984	A\$P	1968	13.4
1977	X8,2	1982	14,3
1978	38,8	1860	14)
1974	35	1981	1夜.1
1988	\$2.8	3032	
1291	38.8	1887	15

	13602	XCE2	
Anis	Recolla	A:85	8955565
1989	52	2007	
1299	494	300.2	
1291	43	3284	23
1968	45	2000	23
1978	\$1.8	1963	23,55
1:294	42	1997	24
1972	485	2001	24
1973	43,2	2053	26
1380	425	3662	2)
1287	40	1281	28

21

maize

Fig. 12 Top of years with high and low harvest of some crops cultivated on the territory of the Republic of Moldova

Table 3. Ratings of Nedealcov Index of Dry Periods (Izu)

Izu Values	Izu Ratings
0,1-1,0	normal period
1,1-2,0	moderate dry period
2,1-3,0	significant dry period
3,1-4,0	hazardous dry period
>4,1	exceptional dry period

tures, contrary, will negative influence the productive process of winter wheat varieties (1400-1500°C). The emergence of areas with temperatures amounts of 3600 - 3800°C occur favourable thermal conditions for cotton cultivation. Undoubtedly, the actual moisture resources will be determined and will be used as a bordering factor in the cultivation of various crops, including cotton. Currently there is a frequent manifestation of the long dry periods. Therefore the Regional Index Nedealcov of Dry Periods (Izu) was developed (tab. 3), which in

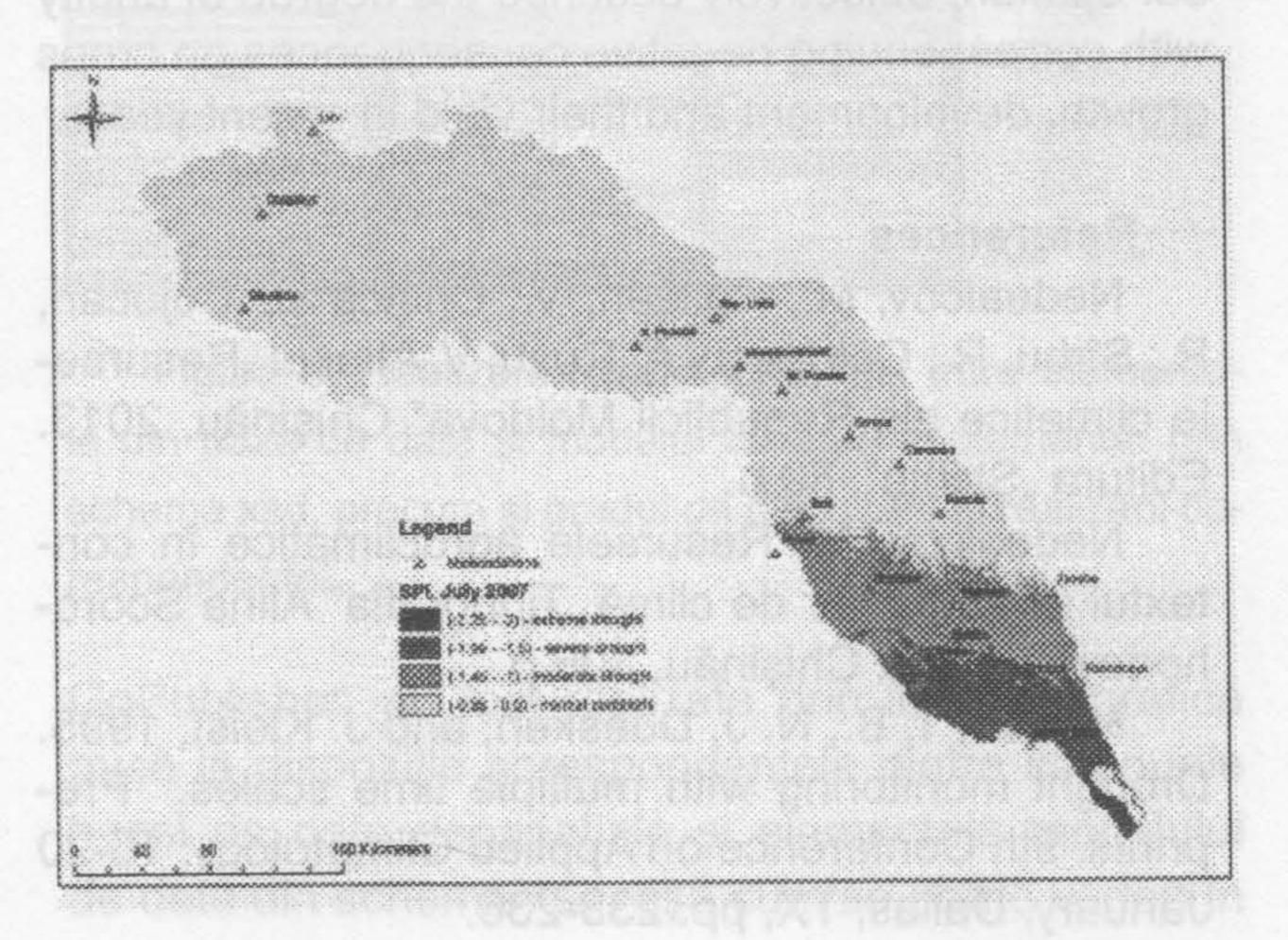


Fig. 13. Cartographic Modelling of the Standardized Index of Atmospheric Precipitation, in the July 2007 certain years gives the destructive degree of drought influence on crop growth and development. Ratings of Nedealcov Index of Dry Periods (Izu) are given in Table 3. Cartographic modelling of Nedealcov Index (fig. 10) of Dry Periods (Izu) in 2007 reveals that within the Dniester Basin dry periods had a dangerous and exceptional manifestation during crop growth and development (months V-VIII) especially in the II, III, IV, and V agro-climatic zones (fig. 11).

Table 4. Ratings of the Standardized Index of Atmospheric Precipitation (SPI)

SPI Values	Ratings SPI		
0,99 < SPI <-0,99	normal period		
-1,0 < SPI < -1,49	moderate Drought		
-1,5 < SPI <-1,99	severe Drought		
SPI < -2,0	extreme Drought		

Thus, over the territory of the Republic of Moldova the productivity of cereals (maize) and industrial crops (sunflower) was the lowest for the last 53 years (1960-2012), namely due to long dry period installation during the months May - August that conditioned a low productivity of these crops. Winter wheat yield recorded in 2007 also was one of the lowest, ranking the fourth place among the years with the lowest yields. We note that the wheat grain in most part of the territory taken under study was extremely crumbly (fig. 12). Cartographic modelling of the Standardized Index of Atmospheric Precipitation elaborated for July 2007, for example, denotes that during this month, the crops in the fourth and fifth agro-climatic zones developed in severe and extreme drought conditions (fig. 13, tab. 4).

SPECIFICAȚIILE TEHNICE INSPI-RE PENTRU ARIILE NATURALE PROTEJATE, INCLUSIV A SITURI-LOR NATURA 2000, CERINȚĂ PEN-TRU RAPORTĂRILE EFECTUATE DE ROMÂNIA LA NIVEL EURO-PEAN Mihai Ioniță, Sorin Rusu, Daniel Cocanu, Daniel Urdă Teamnet Solutions

In conclusion we find that the specific of aridity manifestation within the Dniester Basin requires taking into account some new indices (SPI, Izu), which in our opinion, objectively describe the degree of aridity with corresponding negative consequences on crops growth, development and their yield in recent years. Contact:

Articolul de față își propune să prezinte o modalitate de realizare a setului de date privind ariile naturale protejate din România în conformitate cu specificațiile de date Inspire.

Infrastructura de date spațiale din Europa (INfrastructure for SPatial InfoRmation in Europe) reprezintă o infrastructură de date spațiale la nivel european pentru sprijinirea politicilor comunitare de mediu și a activităților și politicilor cu posibil impact asupra mediului. Directiva Inspire (2007/2/EC) din 14 martie 2007 a fost publicată în Jurnalul Oficial pe data de 25 aprilie 2007. Pentru a deservi scopul de asigurare a interoperabilității datelor spațiale la nivel comunitar, au fost adoptate regulamente de implementare specifice mai multor arii: metadate, date, servicii de rețea, partajarea de date și servicii, și monitorizare, și raportare. Infrastructura europeană pentru date spațiale este constituită din metadate, seturi și servicii de date spațiale, servicii și tehnologii de rețea, acorduri de partajare, accesare și utilizare, mecanisme, procese și proceduri de coordonare și monitorizare, stabilite sau puse la dispoziție conform directivei și regulamentelor subsecvente. Infrastructura europeană de date spațiale se bazează pe infrastructurile pentru informații spațiale, instituite și exploatate de către statele-membre. Statele-membre trebuie să creeze metadatele în termen de 2 ani de la data adoptării normelor de aplicare (Regulamentul CE nr. 1205/2008 al Comisiei din 3 decembrie 2008) pentru seturile de date spațiale corespunzătoare categoriilor enumerate în anexele I și II (3 decembrie 2010), respectiv 5 ani pentru seturile de date corespunzătoare categoriilor din anexa III (3 decembrie 2013).

References

Nedealcov, M., Railean, V.; Chirică L., Cojocari, R.; Sîrbu, R.; Coiceanu, A. Rusu, V. Atlasul "Resursele climatice ale Republicii Moldova" Chişinău, 2013. Editura "Ştiința". 80 p.

Nedealcov, M. Resursele agroclimatice în contextul schimbărilor de climă. Tipografia" Alina Scorohodova" 2012, Chişinău, 306 p.

McKee, T. B., N. J. Doesken, and J. Kleist, 1995. Drought monitoring with multiple time scales. Preprints, 9th Conference on Applied Climatology, 15-20 January, Dallas, TX, pp. 233-236.

Fig. 13. Canographic Modelling of the Standardized In GM d/Attracptienk Prescritetion of the Lang 2007 certain years gives the destruktive degree of about influence on abor gowith and envelopment. Ratings of Nicticatory Index of Uc) Periods (120) are given in Tabla 3. Gategraphic modeling of Nedesloop Index (16) f() of Div Poroot (120) in 2007 reveals that within the Director based or periods had a dergerous and energy enveloperation during crop growth and development (montre 1-2010) aspace of a first he Hill W and V egravolipatic topes (Na. 11) and V egravolipatic topes (Na. 11)

Statele-membre trebuie să se asigure, în măsura posibilităților, că toate seturile de date spațiale nou colectate și restructurate masiv, precum și serviciile de date spațiale corespunzătoare acestora, sunt disponibile în conformitate cu normele de aplicare menționate la alineatul (1) (regulamentele de implementare), în termen de doi ani de la adoptarea acestora. Ținând seama de eforturile semnificative necesare pentru a aduce seturile și serviciile de date spațiale

22