

# **The extreme episodes of rainfall in the press**

a reflection of the 11 rainiest years (1900-2006)

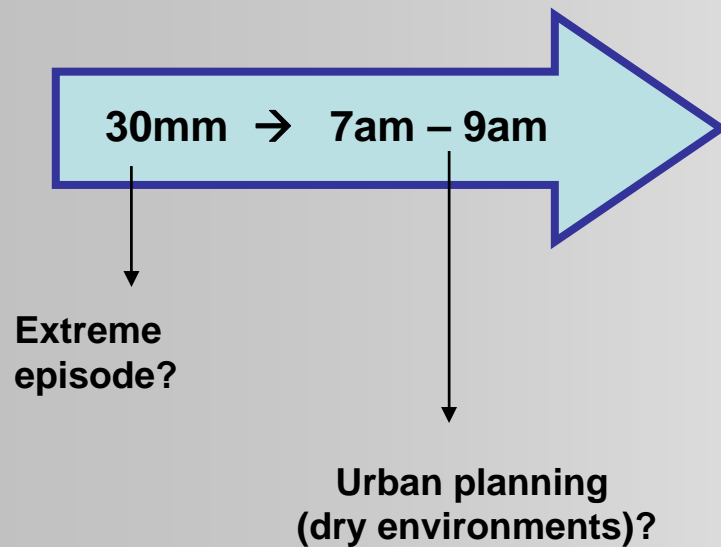
**R. Macieirinha, A. Monteiro**

# Rain at Porto (22 September 2008)

## Press information

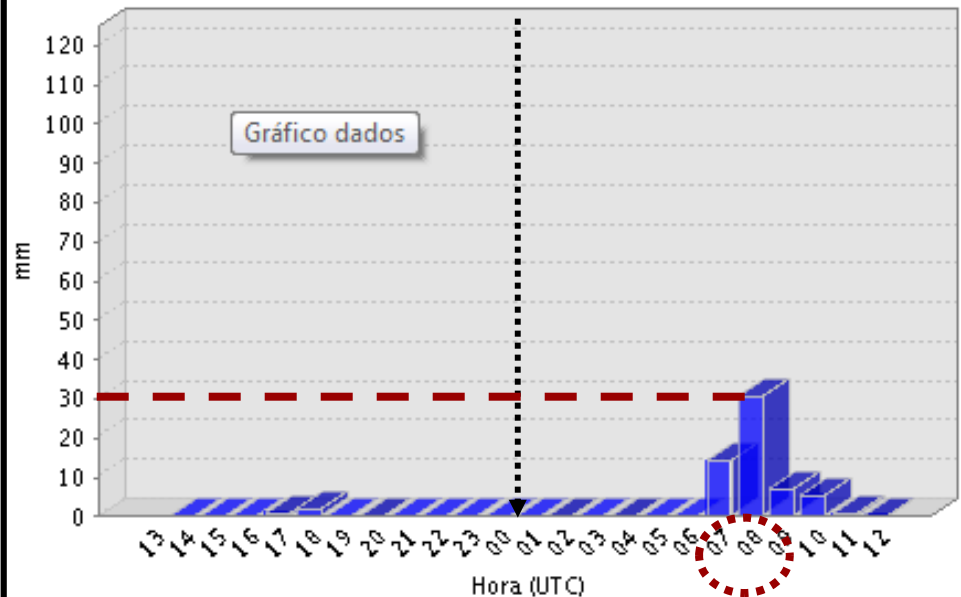


JN, 23/09/2008  
"Porto under a deluge"



## IM data

Accumulated rainfall Porto-PR (21 e 22/09/08)



# How do we perceive the rainfall?

How important are the **newspaper**  
for our mental construction  
about rainfall amount, intensity, duration?

Did the press react in the same way during the 20th century?

**Perception** → is a form of guessing what will happen next...

it means **working out** and **judging** what could happen

Whilst perception skills can only be acquired through experience you can speed up the learning process by having a better understanding of the factors that should be considered when **building up a mental picture** of what's likely to happen next.

You may **perceive risks that aren't really there** or indeed ignore risks that are!

**Awareness-Understanding-Persuasion process  
contribute to  
informed, logic-based judgement**

**Newspaper Stories ?**

**Overexploitation risks**

**“...Ninety percent of what we do is based on perception. It doesn't matter if that perception is right or wrong or real...”**

*Making Book on the Buck*, Wall Street Journal, Sept. 23, 1988, p. 17.

**Rainfall** → “Pseudo-fact” ? Myth?

***Are perceptions true?***

**Is rainfall an undesirable enemy?**

**The several media items and newspapers stories about the occurrence of rainfall  
do contribute to climatologically awareness ?**

**Is there work in progress throughout our society to improve climatologically knowledge?**

**or**

**Is still a great gap between the perception of weather as science  
and  
of weather as common sense?**

We face a rainy day as we do in any stochastic process...

## Rational Behavior Facing Stochastic Processes: The Case of Weather

**Problem:** How to dress appropriately?

**Strategies:** Shorts, T-Shirt, Rain Coat, Pullover, Umbrella, Combinations thereof.

**Utility:** How we feel when wet, cold, sweaty...

**Expectations:** Weather Forecast!

**Rational Reasoning:**

If Sun then Shorts and T-shirt

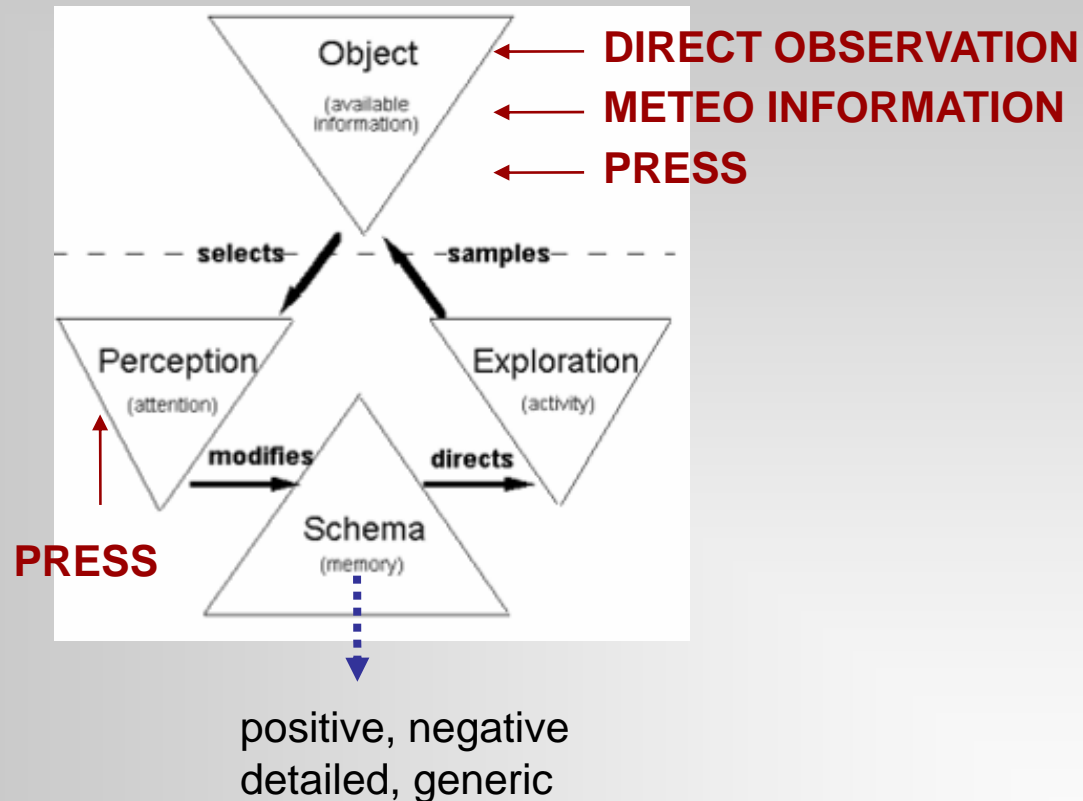
If Rain (**and no wind**) then Umbrella

etc.

If we apply to rainfall...

## The Perceptual Cycle

(U. Neisser, Cognition and Reality, 1976)



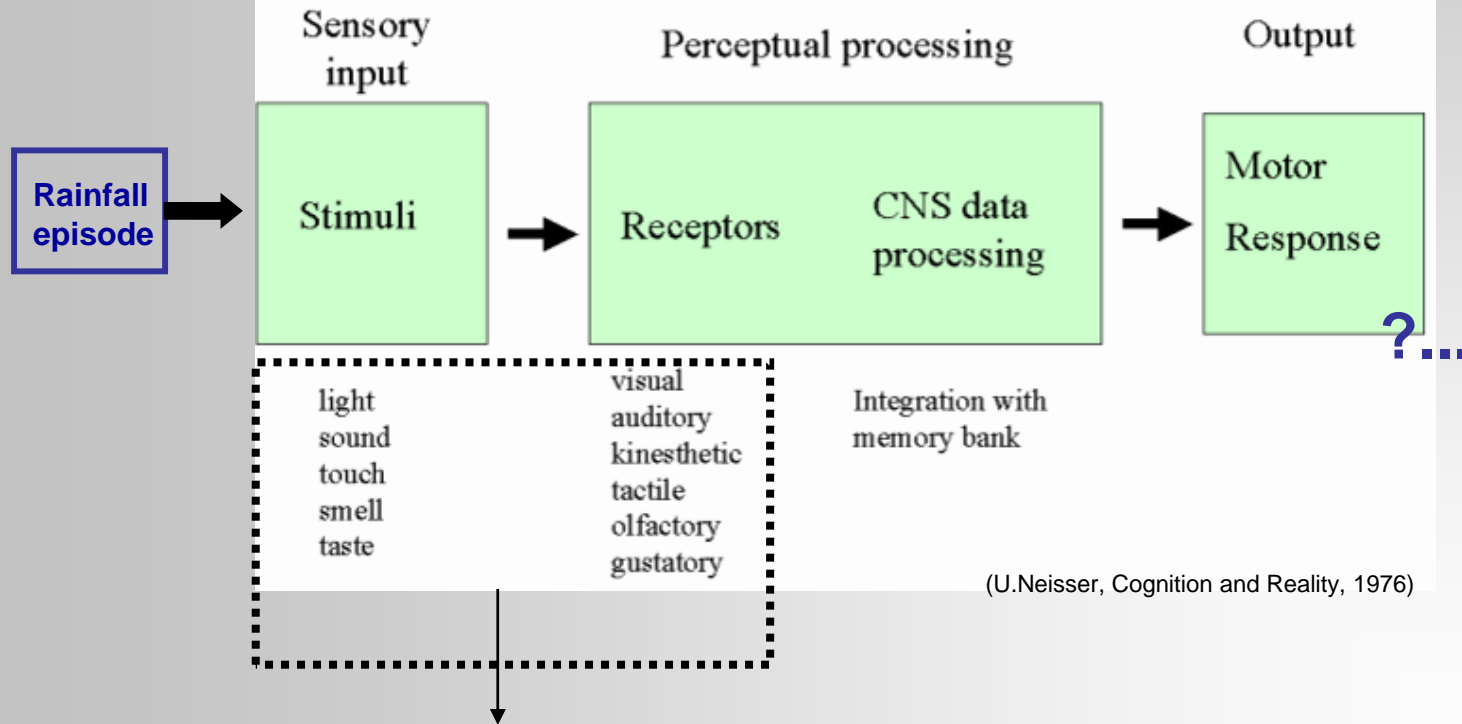
Rainfall episode

?...



If we apply to rainfall...

## General Information Processing Model (perceptual motor)

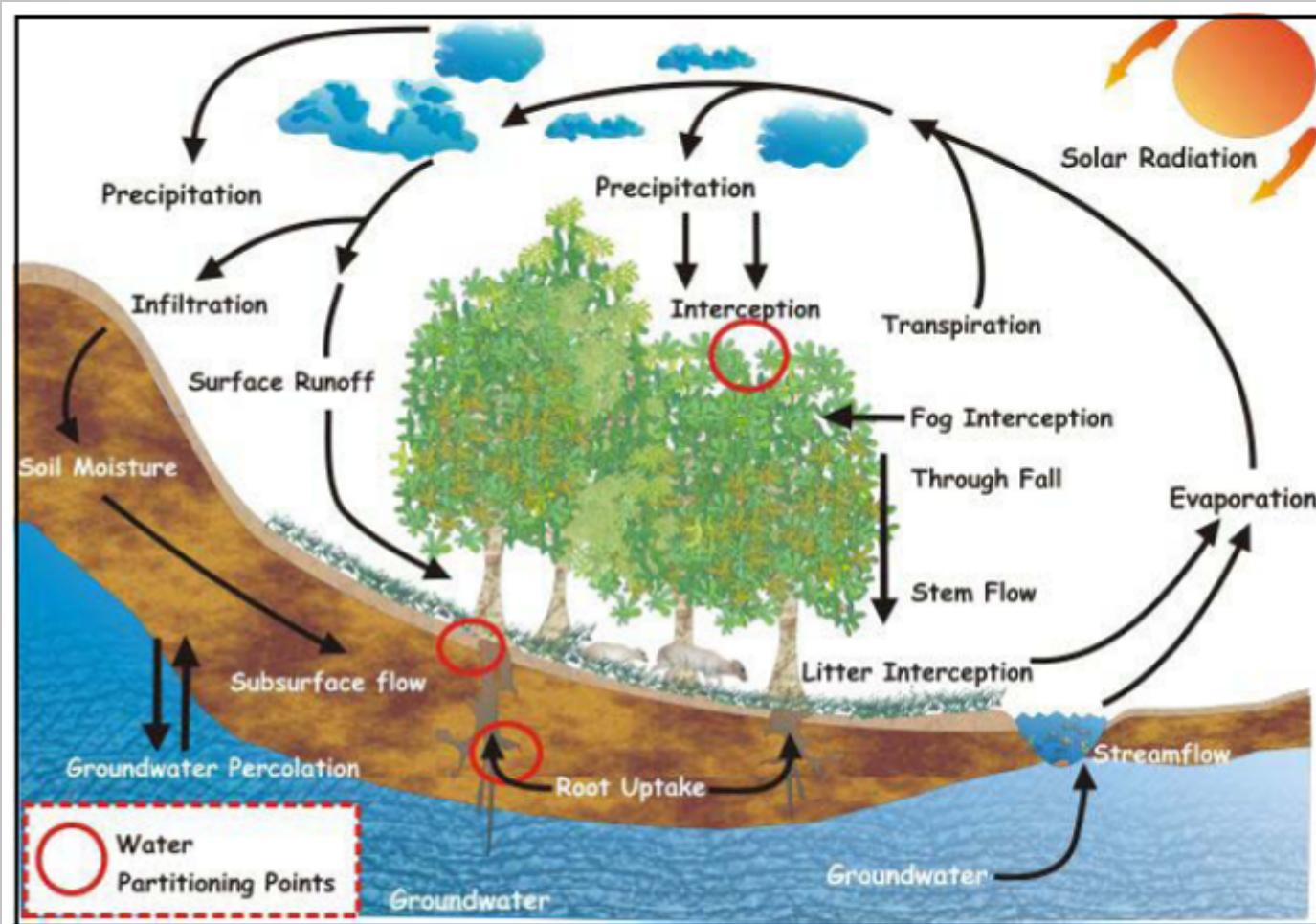


negative for urban citizens....surprise!  
positive/negative for farmers

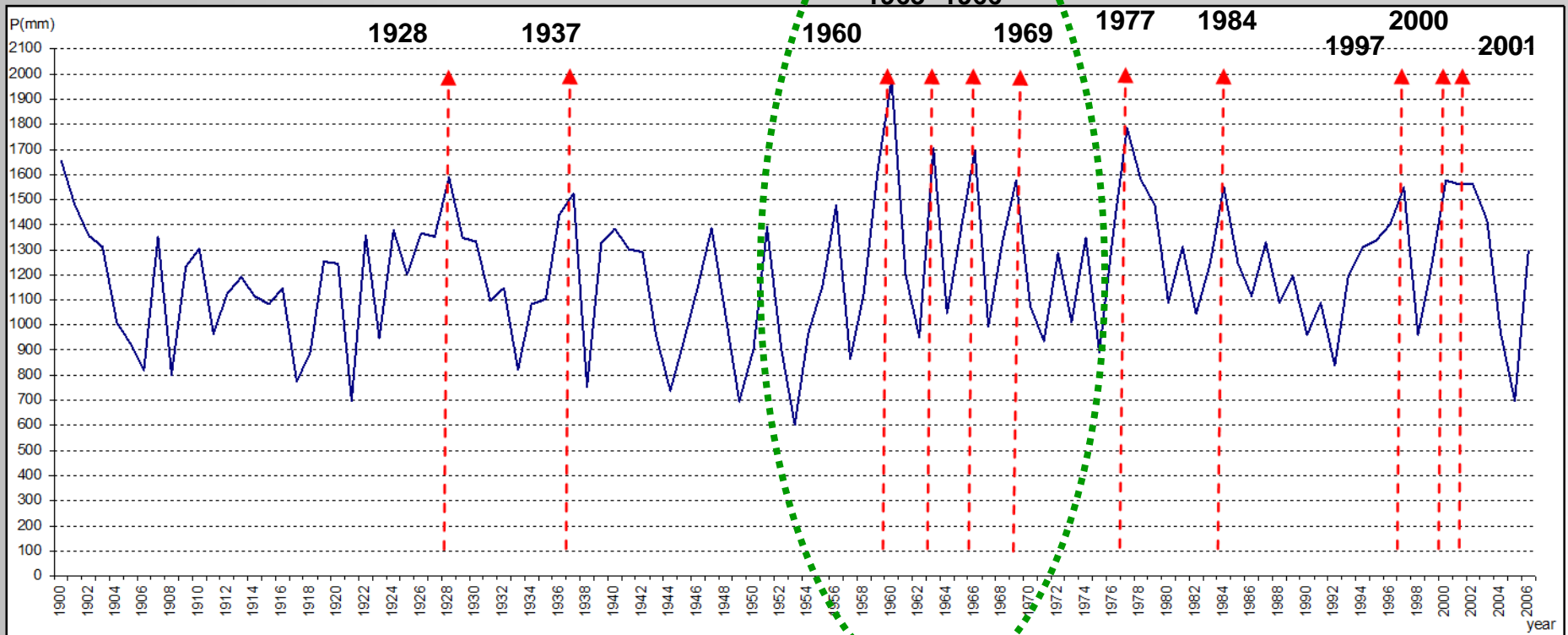
**Do we understand the water cycle?**

# Precipitation data at Porto vs Newspaper stories

In the 11 rainiest years of the century



# The 11 rainiest years at Porto (1900-2006)



**The importance given to extreme episodes of rainfall by press was always the same?**

Let's see how the press behave in each of these 11 rainiest years.....

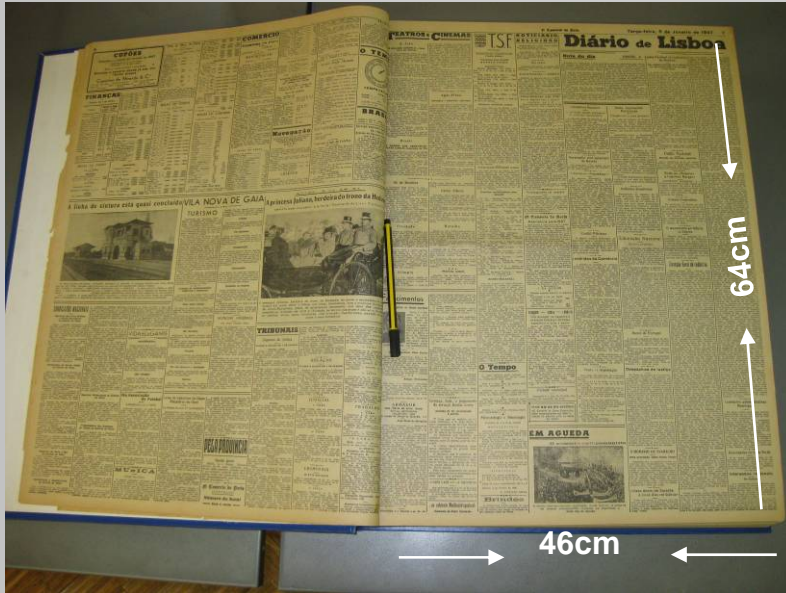
Analysing more than 2000 daily newspapers of

## ***O Comércio do Porto***

(a portuguese newspaper created at Porto and published  
from **2 June 1854** till **2005**)

# Newspaper's dimension changed

1928/1977



1984/1997



2000/2001



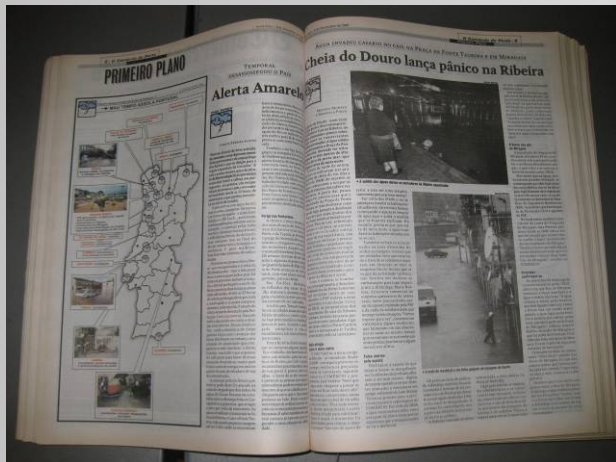
Year 1977



Year 1997



Year 2000

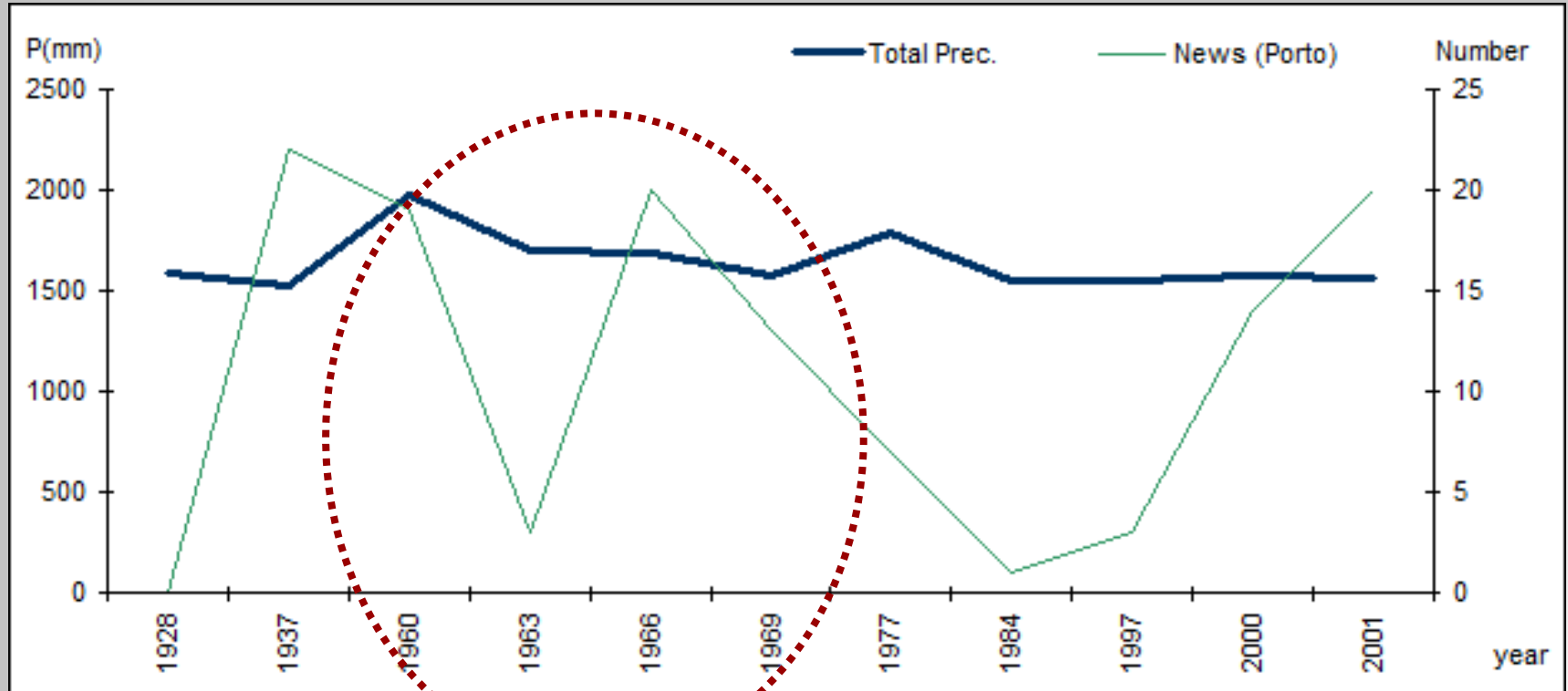


Year 2001



Full page news with text about a rainfall episode

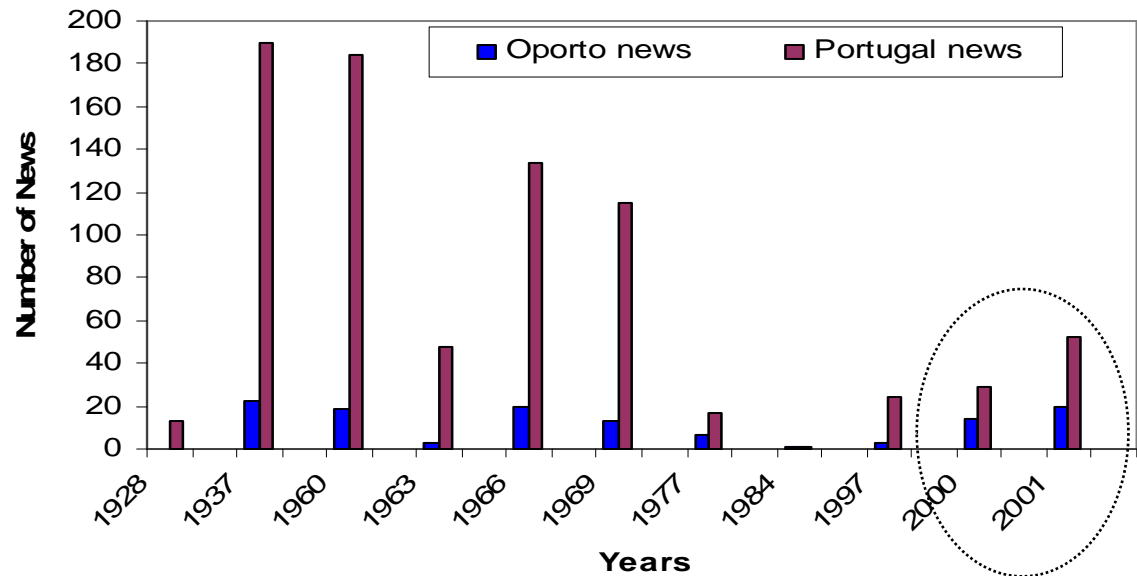
Rainfall ↔ News



It seems that there is no relationship at all!.....



## Oporto News/Portugal News



Year	Number of news				Graphical spot		
	Oporto news	Portugal news	Odd page	Even page	Min.	Max.	Media
1928	0	13	0	13	0,6%	10%	5%
1937	22	190	102	110	0,2%	50%	11%
1960	19	184	158	45	2%	62%	28%
1963	3	48	39	12	2%	44%	13%
1966	20	134	88	66	4%	100%	55%
1969	13	115	80	48	4%	100%	29%
1977	7	17	13	11	4%	100%	28%
1984	1	1	1	1	7%	21%	14%
1997	3	24	17	10	20%	100%	78%
2000	14	29	21	22	29%	100%	71%
2001	20	52	34	38	42%	100%	87%

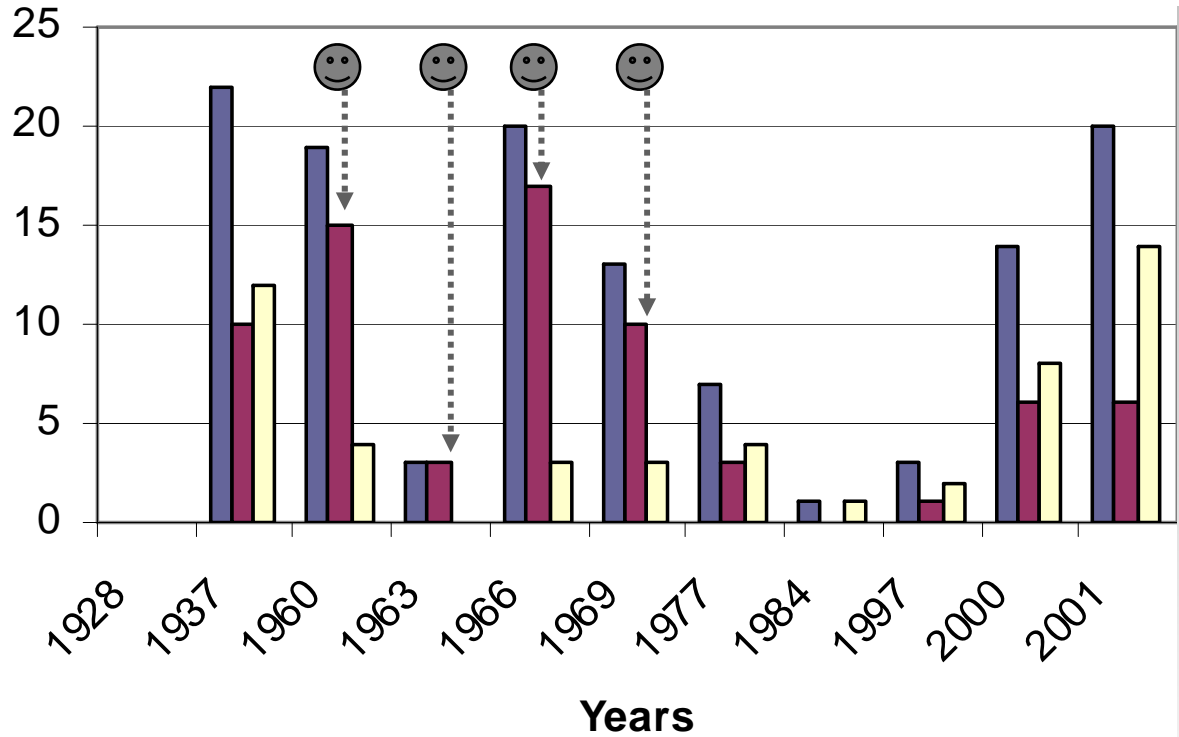
Despite, being  
a newspaper of Porto  
it published  
more news  
of Portugal  
than  
of Porto

Having in mind that

odd page  
is  
more  
important....

## Oporto news in odd and even page

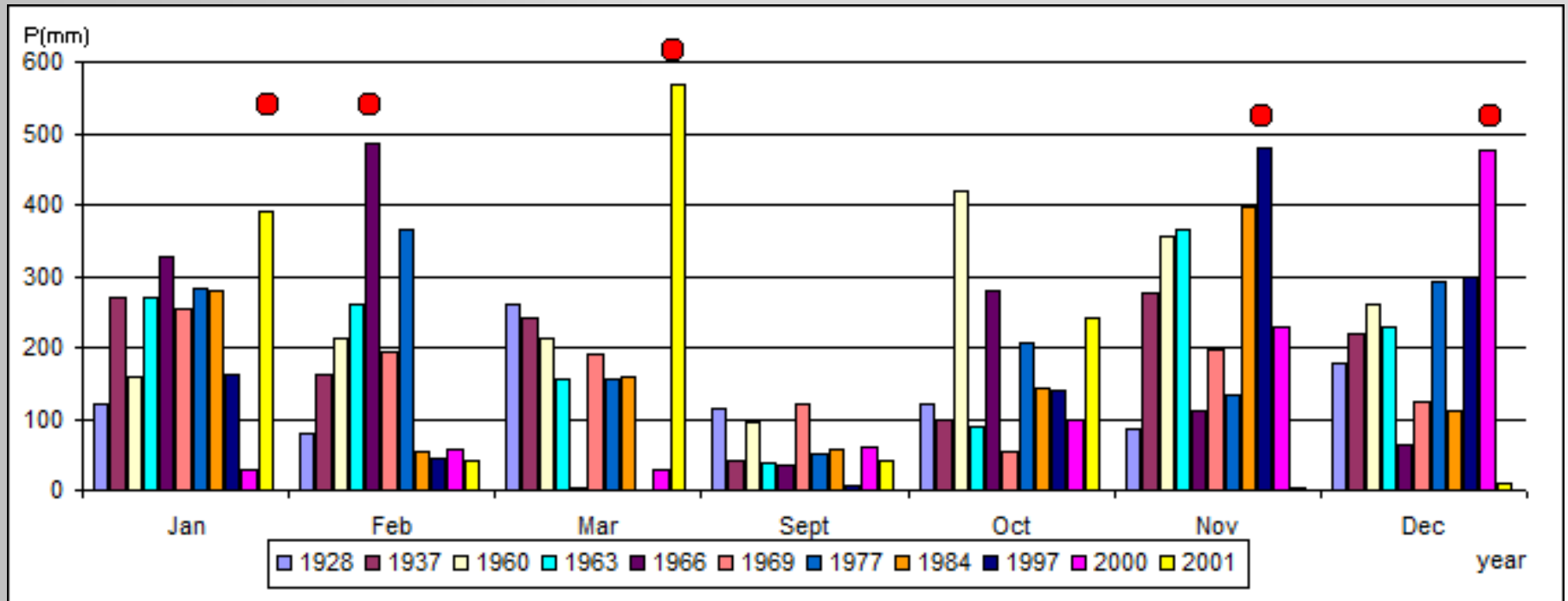
news



<u>Years</u>	<u>Oporto news</u>	<u>Odd page</u>	<u>Even page</u>	<u>Portugal news</u>	<u>Odd page</u>	<u>Even page</u>
1928	0	0	0	13	0	13
1937	22	10	12	190	92	98
1960	19	15	4	184	143	41
1963	3	3	0	48	36	12
1966	20	17	3	134	71	63
1969	13	10	3	115	70	45
1977	7	3	4	17	10	7
1984	1	0	1	1	1	0
1997	3	1	2	24	16	8
2000	14	6	8	29	15	14
2001	20	6	14	52	28	24

Looking through rainfall data we will expect the majority of news in:

- January 2001
- February 1966
- March 2001
- November 1997
- December 2000



- January 2001

- February 1966

- March 2001

- November 1997

- December 2000



Year	Jan	News	Feb	News	Mar	News	Sept	News	Oct	News	Nov	News	Dec	News
1928	119,3	0	78,7	0	259,1	0	113,3	0	119,9	0	87,2	0	177,9	0
1937	270,4	8	162,3	3	241,7	2	42,1	0	98,2	0	275,1	6	218,0	3
1960	157,5	0	213,5	2	211,5	5	96,6	0	420,2	8	356,8	4	259,3	0
1963	269,5	0	259,9	2	156,4	1	37,3	0	87,7	0	365,9	0	228,0	0
1966	326,7	2	486,8	18	2,0	0	36,1	0	278,0	0	110,5	0	64,1	0
1969	253,5	4	192,6	1	189,2	8	120,4	0	54,8	0	196,0	0	123,4	0
1977	283,1	1	363,5	5	155,6	0	51,3	0	206,0	1	134,2	0	292,0	0
1984	280,7	0	54,4	0	159,1	0	57,3	1	144,2	0	395,4	0	109,9	0
1997	162,2	0	43,3	0	0,4	0	6,9	0	138,1	2	478,9	1	299,2	0
2000	27,1	0	58,3	0	27,2	0	61,1	0	97,2	0	227,3	1	476,7	13
2001	391,1	12	41,9	4	567,4	4	42,5	0	240,0	0	2,4	0	9,0	0

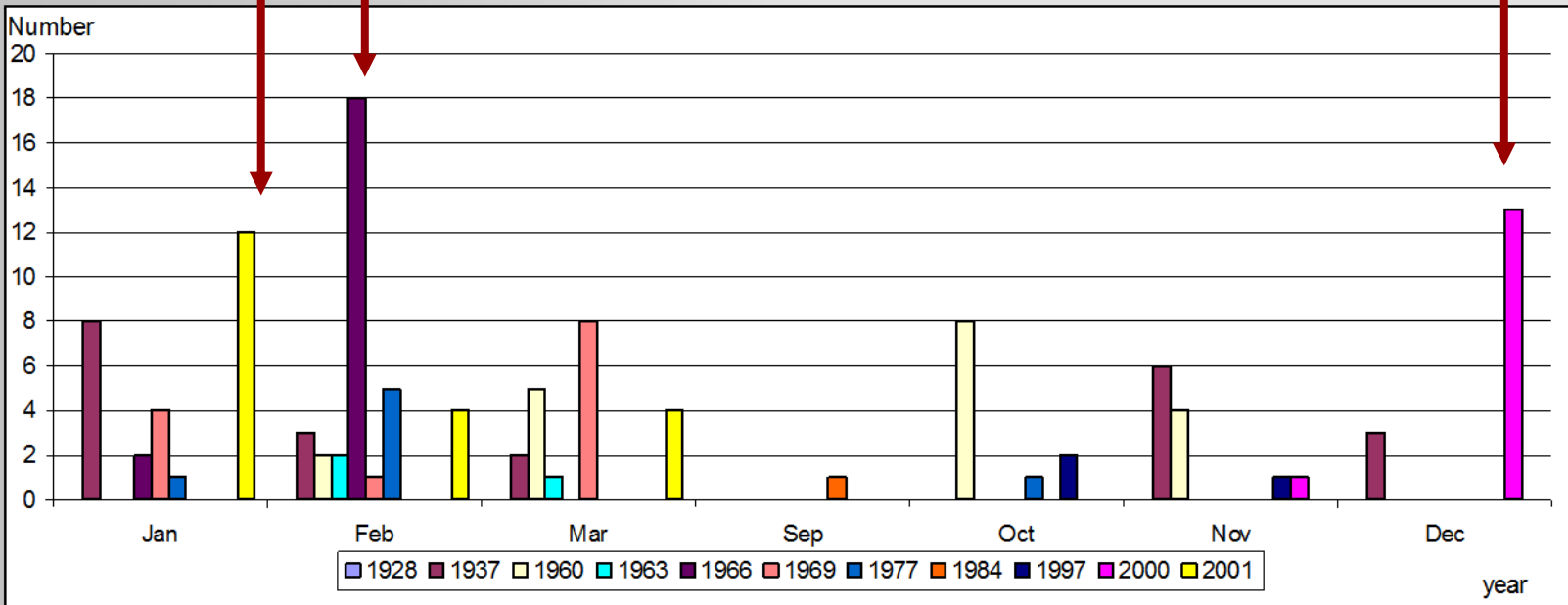
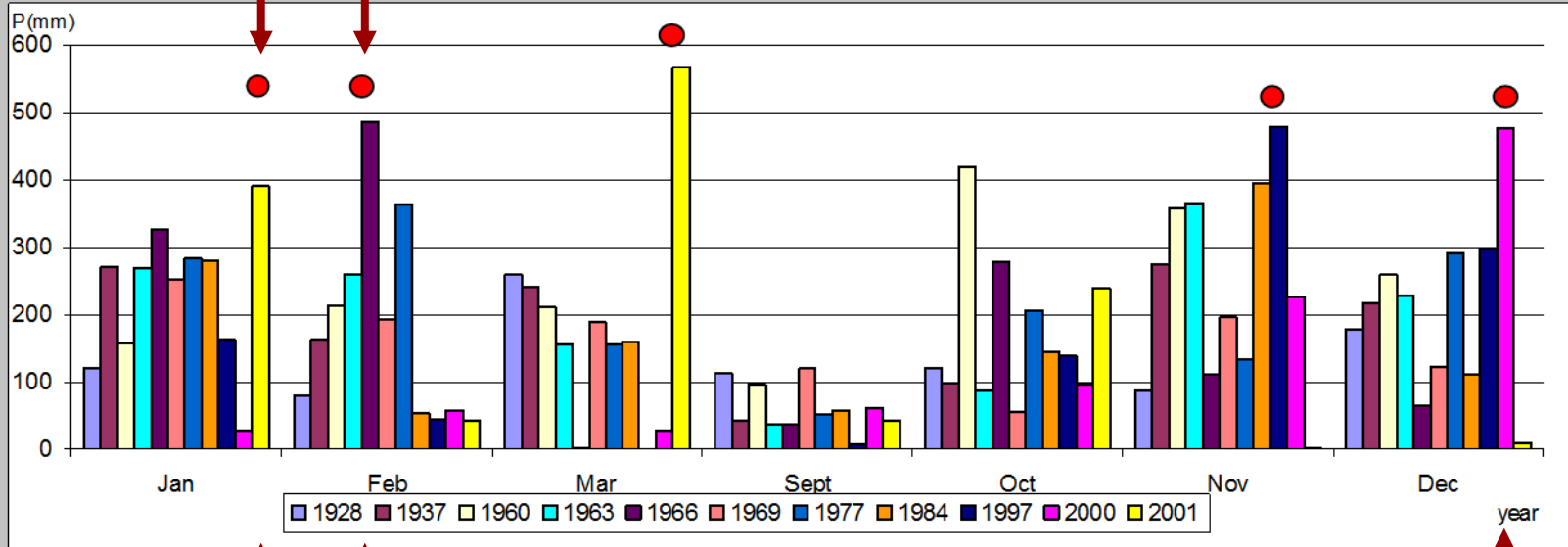
The rainiest months have always the greater number of news?

**NO**

January 2001

February 1966

December 2000



## The monthly rainiest episodes have more odd pages?

Years	Jan P(mm)	Odd page	Feb P(mm)	Odd page	Mar P(mm)	Odd page	Sep P(mm)	Odd page	Oct P(mm)	Odd page	Nov P(mm)	Odd page	Dec P(mm)	Odd page
1928	119,3		78,7		259,1		113,3		119,9		87,2		177,9	
1937	270,4	5	162,3		241,7	1	42,1		98,2		275,1	4	218	
1960	157,5		213,5	2	211,5	5	96,6		420,2	4	356,8	4	259,3	
1963	269,5		259,9	2	156,4	1	37,3		87,7		365,9		228	
1966	326,7	2	486,8	15	2		36,1		278		110,5		64,1	
1969	253,5	4	192,6		189,2	6	120,4		54,8		196		123,4	
1977	283,1	1	363,5	1	155,6		51,3		206	1	134,2		292	
1984	280,7		54,4		159,1		57,3		144,2		395,4		109,9	
1997	162,2		43,3		0,4		6,9		138,1		478,9	1	299,2	
2000	27,1		58,3		27,2		61,1		97,2		227,3	1	476,7	5
2001	391,1	4	41,9	2	567,4		42,5		240		2,4		9	

false

false

false

## The monthly rainiest episodes have major graphical spots?

Years	Jan	Spot	Feb	Spot	Mar	Spot	Sep	Spot	Oct	Spot	Nov	Spot	Dec	Spot
	P (mm)	(%)	P(mm)	(%)	P(mm)	(%)	P(mm)	(%)	P(mm)	(%)	P(mm)	(%)	P(mm)	(%)
1928	119,3		78,7		259,1		113,3		119,9		87,2		177,9	
1937	270,4	0,4	162,3	0,2	241,7	0,1	42,1		98,2		275,1	0,3	218,0	0,2
1960	157,5		213,5	0,3	211,5	0,7	95,6		420,2	1,1	356,8	0,5	259,3	
1963	269,5		259,9	0,5	156,4	0,3	37,3		87,7		365,9		228,0	
1966	326,7	0,7	486,8	6,4	2,0		36,1		278,0		110,5		34,1	
1969	253,5	0,9	192,6	0,2	189,2	1,8	121,4		54,8		196,0		123,4	
1977	283,1	1,2	363,5	5,8	155,6		51,3		206,0	1,2	134,2		232,0	
1984	280,7		54,4		159,1		57,3	7	144,2		395,4		109,9	
1997	162,2		43,3		0,4		3,9		138,1	5,8	478,9	2,9	239,2	
2000	27,1		58,3		27,2		61,1		97,2		227,3	1,7	476,7	21,5
2001	391,1	14,5	41,9	4,8	567,4	4,8	42,5		240,0		2,4		9,0	

false

true

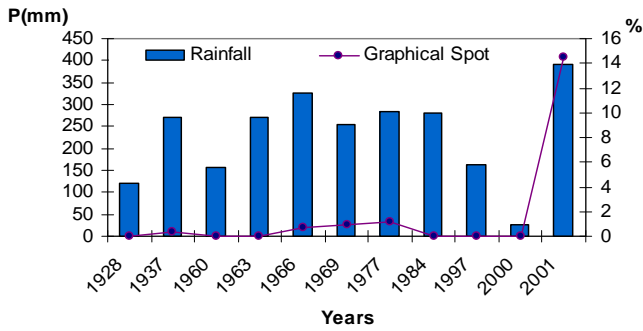
true

false

true

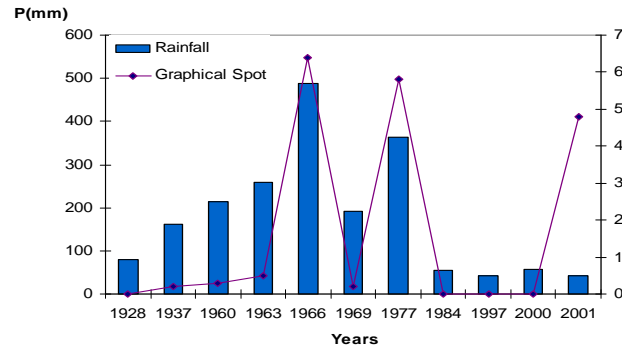
true

January Rainfall/Graphical Spot



true

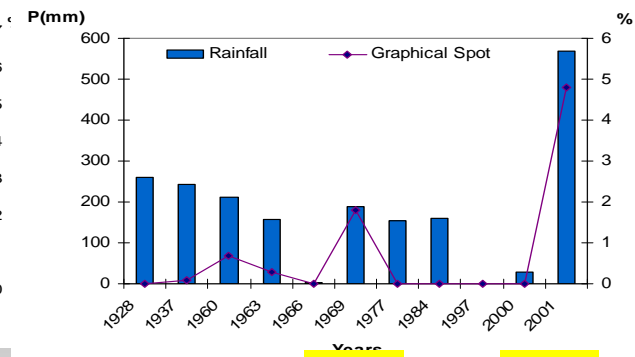
February Rainfall/Graphical Spot



true

true

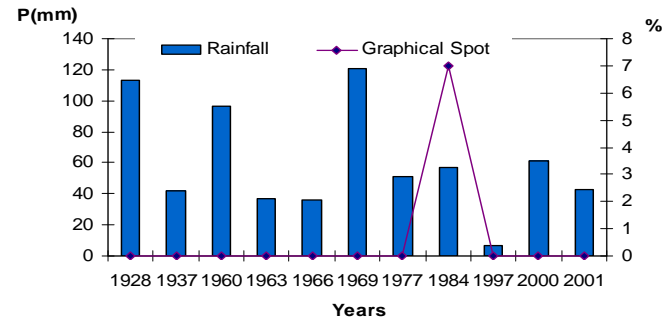
March Rainfall/Graphical Spot



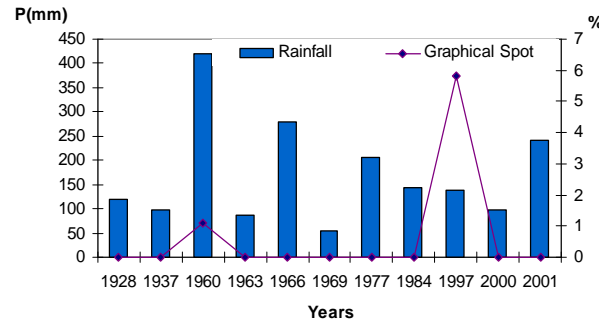
true

true

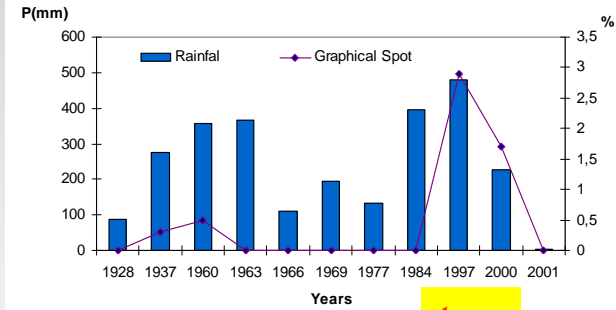
September Rainfall/graphical spot



October Rainfall/Graphical Spot

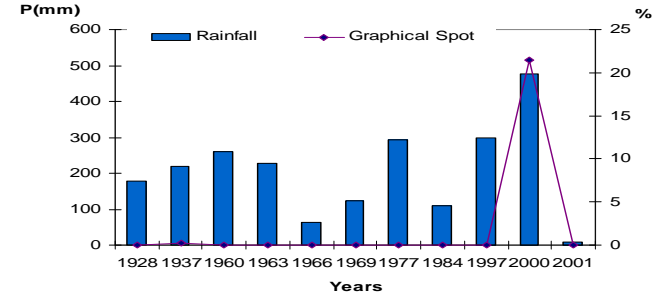


November Rainfall/Graphical Spot



true

December Rainfall/Graphical Spot



true

Sometimes

the higher precipitation coincide with major graphical spots





**Rainfall still is an undesirable enemy?**

**The several media items and newspapers stories about the occurrence of rainfall  
do not contribute to climatologically awareness**

**We need to help society to improve climatologically knowledge?**

**We have a great gap between the perception  
of weather as science  
and  
of weather as common sense?**

**We should**

**make an effort**

(science and media)

**and join forces to turn**

**climatology** into **common sense concepts**,

**and thereby accelerate the process  
of**

**a better public understanding and perception of climate**

**Thank you.**