

# **The importance of people in Geographic Information Systems**

**Adrián Ocat BUSSOLINI, Argentina**

**Key words:** Geographic Information System, Data, People, Creativity

## **SUMMARY**

Are data or people more important in the conformation of a Geographic Information System? The theory currently includes 5 categories: Data, Methodologies, Software, Hardware and People. Methodologies have been incorporated later. Previously, this topic was under the heading People. The importance of People is given in that they make the methodologies, use the software and give viability to the data, whether they are scarce or powerful.

The quality and accuracy of data has increased over time but software and hardware make it much more versatile to handle today. It is the user who makes the data worthwhile, good or bad.

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## 1. Introduction

Are data or people more important in the conformation of a Geographic Information System? This question that I ask in exams or in classes is not to receive a categorical answer but to open a debate. Teaching should be based on a thorough understanding of the subject to be solved and not on repeating exactly what the textbooks say. This is what we propose as a pedagogical framework. ...

Decades ago, data seemed to occupy the central role because of the difficulty of obtaining, processing and manipulating it. The objectives defined by people did not have a great variety. They were thought to be easily achievable goals for the available technology.

With the incredible progress in terms of hardware and software, we can think of an end of history, as some thinkers call the future of humanity. This advance brings with it a paradoxical defeat in terms of goals. Simple goals are no longer admissible to justify the main objective. The solution to a given problem will be a surprise and not something easily deducible.

People as active subjects in planning must think of ways for the Geographic Information System to solve complex problems by actively combining multiple layers and not just be a massive storage that answers obvious questions for today's technology.

To help with this, from my chair of Territorial Information Systems 2 in the Surveying career of the Faculty of Exact Sciences, Engineering and Surveying, we evaluate the projects to be carried out. It is approved based on the creativity needed to solve it and not on the massiveness of data. Extra points are also given for using unpublished software in our subjects. It seems contradictory for a career where the subject of Cadastre or Valuations is common that we do not focus on data and its accuracy. These are two basic things but they are not enough.

We will go through different students' works, research projects and field works with very different topics but that emphasize the creativity of the resolution and the new information that it contributes.

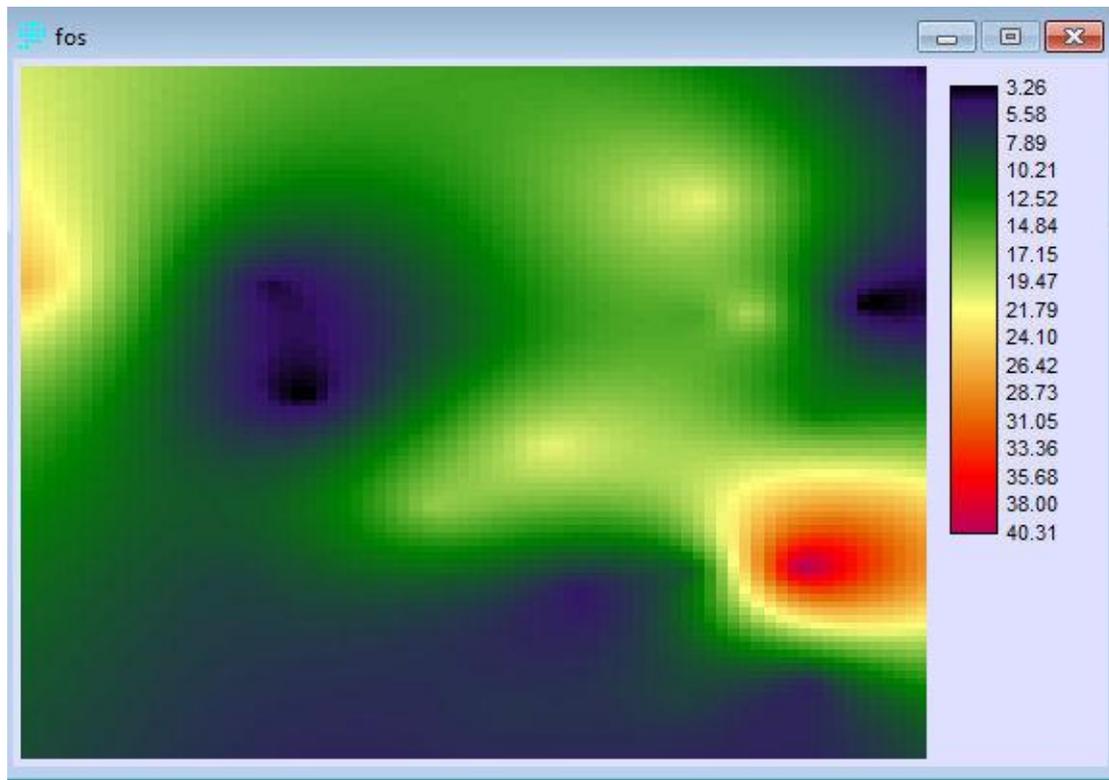
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## 2. Crop Feasibility

In a field in the province of Santa Fe, an attempt was made to determine the feasibility of certain crops. For this purpose, soil samples of Phosphorus, Organic Matter, Nitrate, PH and Salt were taken. The appropriate intersection operations were carried out for the requirements of each crop.

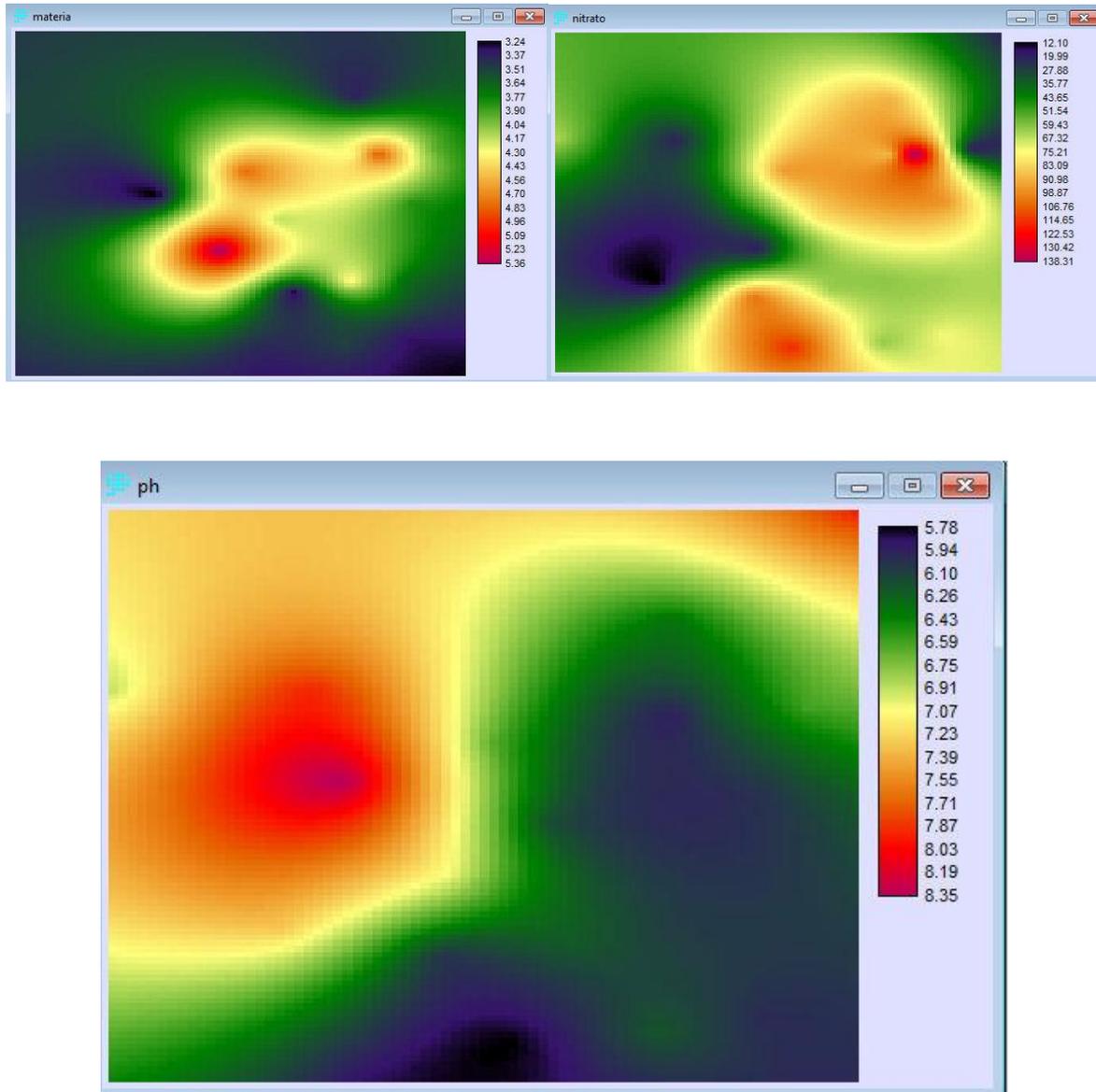
The Black, Blue and Green zones are observed as those with the lowest amount of Phosphorus and the Yellow and Red zones with the highest amount. It is not necessary a pixel by pixel appreciation but a global look on the zones of minimum and maximum amount of Phosphorus.



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The same applies to Organic Matter, Nitrate and PH



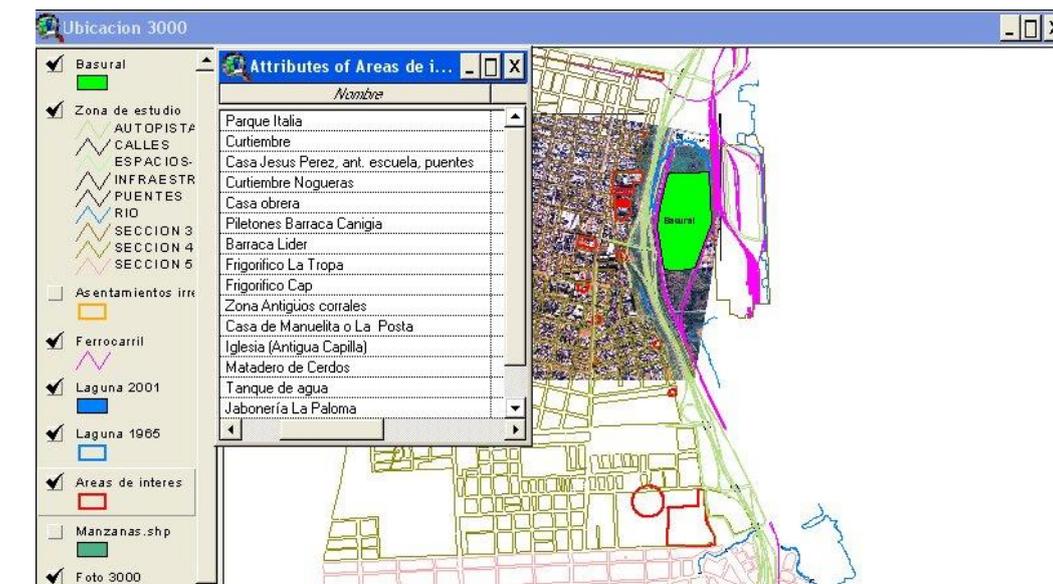
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## 3. Archaeological and socio-cultural potential

In the southeastern section of the city of Rosario (Tablada neighborhood) a series of archaeological sites, with chronology of the twentieth century, in different situations of preservation and of diverse historical significance, in order to draw up a chart of Archaeological and Sociocultural Potential. Four sites linked to the history of the Port and to the economic activities of tanneries and landfills were identified and municipal protection measures were taken. A Geographic Information System was developed to synthesize and territorialize the information obtained.

The polygons in red are the sites of historical interest whose description is in the associated table. The global appreciation of the sites is sufficient to evaluate the phenomenon from an anthropological point of view and does not require extreme precision.



The same area seen more closely with particular geographic details. The large blue polygonal represents a lagoon in 1965. The smaller blue polygon is the lagoon in 2001. It is the background of where the dump was located where objects of historical value were found...

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## 4. Mass Appraisals

A massive valuation project with analysis and determination of valuation variables and multiple regression models.

### TESTES DE HIPOTESIS - CALCULO DA PROBABILIDADE DE $b_i=0$

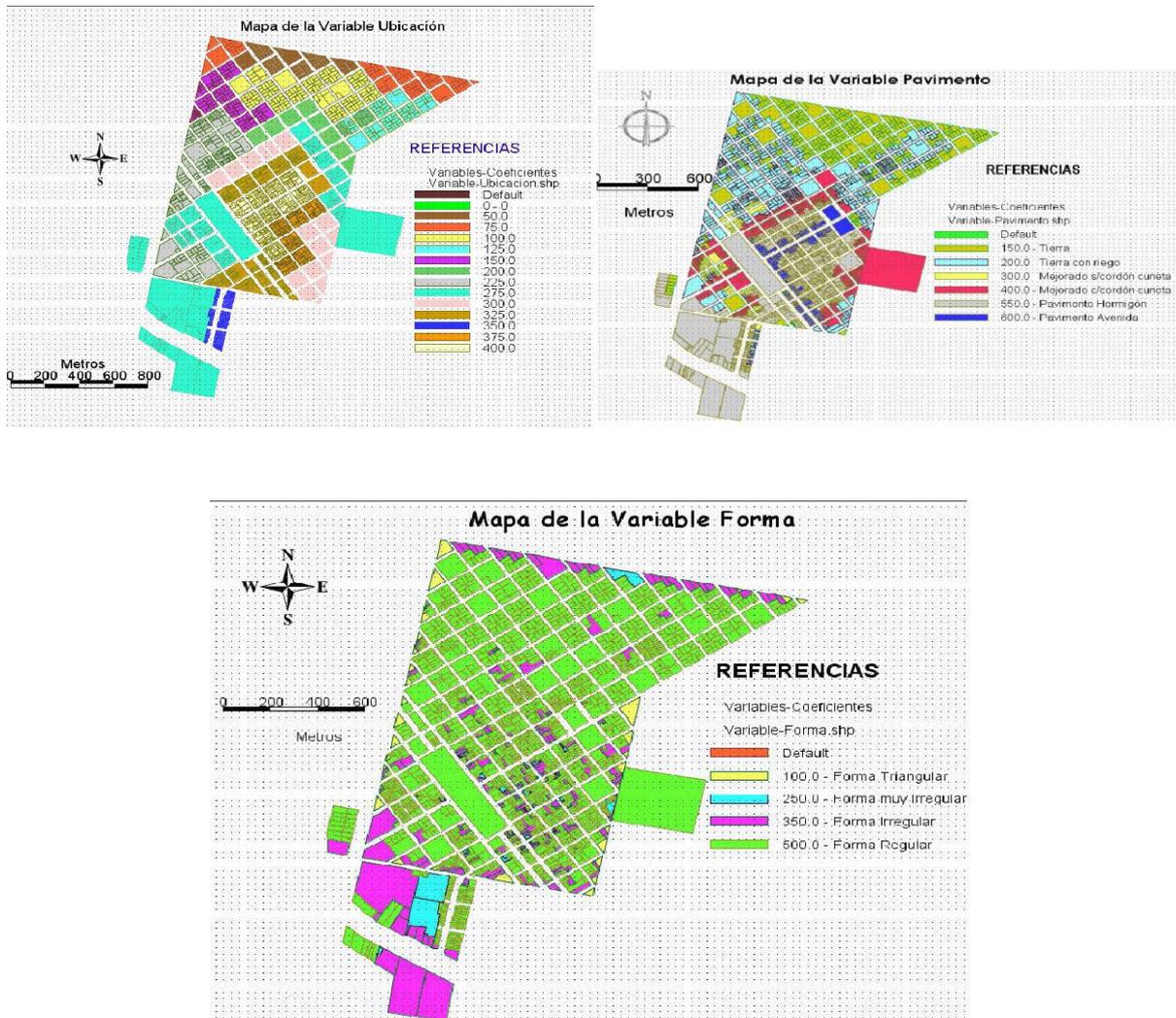
VARIAVEL	$b_i$	ERRO PADRAO	t CALCULADO	PROBABIL.(%)
X1 =CLOACAS	10,908837	8,848129	1,232898	11,155504
X2 =AGUA	5,219676	4,988650	1,046310	15,127068
X3 =TOPOGRAFIA	$2,039495*10^{-05}$	$2,500363*10^{-05}$	0,815680	21,253943
X4 =UBICACION	$5,918965*10^{-05}$	$9,471310*10^{-06}$	6,249363	0,000464
X5 =SUPERFICIE	3,905399	5,697152	0,685500	24,797817
X6 =PAVIMENTO	$1,603266*10^{-04}$	$3,093727*10^{-05}$	5,182313	0,002564
X7 =ALUMBRADO	-10,833478	6,047772	-1,791317	3,885992
X8 =FORMA	$7,248659*10^{-05}$	$2,517063*10^{-05}$	2,879809	0,327147
X9 =ESQUINA	$8,583380*10^{-05}$	$4,928863*10^{-05}$	1,741452	4,304800

Data in alphanumeric form does not fully describe the situation. The idea is to show global maps with the variables Location, Pavement or Shape instead of focusing exclusively on valuation accuracy.

6

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## 5. Conclusion

This different way of thinking about Geographic Information Systems without being overwhelmed by the technological possibilities is a step forward to achieve objectives closer to the people. In my experience, teachers, researchers and students who focus on studying in detail every command of the software are at a disadvantage with those who try to focus on the problem to be solved in a creative way. ...

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