Review Article

Social changes, changes in spaces: what management strategy for cities;the case of the city of Laghouat (Algeria)

Abstract

With the communication highways, information begins, little by little, to escape from the traditional centers of political, military, business or even religious power. In society, which believes that it is gradually freeing itself from these powers, doubt is beginning to settle in, a number of questions arise, a new breed of commentators, youtubers, influencers, interpreters and preachers in all areas of social life that try to draw you into their context, their culture or their fashion.

Moreover, the globalization of exchanges, relations, transportation tools, financial networks and marketing calls into question, implicitly and slyly, the concepts of State, Nation, Community, the very belonging of the 'Individual to a "group", as part of a united Whole. The citizen is becoming more and more an individual connected to his telephone and isolated from the rest.

But with the decrease in resources and the increase in constraints of all kinds, the people wonder about their past, their future, their present; the malaise it is going through. She wonders about the modes of governance that are imposed on her, about the many problems she faces daily and the solutions that we cannot offer her. She looks elsewhere and compares, compares herself to other societies and begins to dream, to hope and, very quickly, to express her anger.

The viable geographical space which is shrinking from year to year, the anarchic and how rapid expansion of agglomerations, the resources which are running out are all sources of additional concern for societies which are looking for themselves and no longer find themselves in an organizational system they no longer understand, tossed as they are between a protective past, a tempting present and an elusive future.

This article attempts, for the city of Laghouat, to identify the difficulties to be overcome for a new management of spaces and for societal education. He then proposes the implementation of a management strategy based on the creation of a complete database on the physical spaces, the infrastructures, the networks (including the urban transport networks) as well as the services involved in the day-to-day management of the city.

Keywords: sustainable management, environment, resource management

Abdelkader Abdellaoui
Avicenna Virtual Campus Network, Algeria

Correspondence: Abdelkader Abdellaoui, Avicenna Virtual Campus Network, Algeria, Tel 33 6 52 48 91 49
Email abdellaoui.geo@gmail.com

Introduction

The population living in Laghouat (like all cities in Algeria) is now connected and turned towards the outside world via television and social networks, more than towards its own context. It is increasingly impregnated by other ways of life and other concerns. Can you find a home that does not have a satellite dish to capture programs from elsewhere, series from elsewhere, films from elsewhere. On the contrary, we will mainly find residences with several satellite connections facing several satellites: the one that captures Europe, the one that captures the Middle East; figure 1 illustrates it well as you can note it by observing several parabolas on the same balcony or on the same roof of the same residence. The parabola is everywhere as shown in figure (1): it makes it possible to follow Egyptian series, Turkish, even Chinese. These series evoke contexts from elsewhere, a bit of a dream of course, a moment of retreating to forget the daily difficulties. The series moreover, because our TV does not allow us to understand reality, nor to dream of elsewhere. Before, yes before, the Rouiched, Inspector Tahar, the apprentice and many others animated our media spaces! Where are they now ? Where is the succession ? The national press itself highlights the programs of French television channels. vision of property, of the Other and of the community changes; we

appropriate, quite naturally, parts of public spaces; we argue that they are useless and that by taking them, we value them! Where is the respect for the law, where is the consideration of others? Figure (2) shows an example that tends to multiply Laghouat would be the Latin transcription of El Aghouat which is, in Arabic, the plural of 'ghout' or "a house in a garden". Ibn Khaldoun gives this name a Berber origin: El-Aghouat which means "serrated mountain". Laghouat has also been presented as coming from the Arabic word el alwat meaning "the gardens", in reference to the many orchards of the oases of the region; this hypothesis does not seem very plausible. Laghouat has also been linked to the name of a tribe mentioned by Procope, the Leucathes. Laghouat would have been the city of the Beni Lekwat, an Amazigh Zènète tribe. The Amazigh (or Berbers, natives of North Africa) were known in antiquity as the Libyans. The Zénètes are a group of Berber tribes inhabiting, in antiquity, an area extending from western Egypt to Morocco alongside the Sanhadja and the Masmouda with a mainly semi-nomadic or nomadic way of life.

Laghouat is the point of convergence of the Saharan tracks, which make it one of the gateways to the Sahara. Industrial development, the exploitation of the Hassi Rmel gas field in the 1960s and the rural exodus led to an average annual growth rate of around 4.5%, well

above the national average rate of 2%. The city is expanding and occupying ever more space to accommodate an increasingly large population: the various ONS censuses give the statistics from 1977 to 2011 (Table 1).

Figure 1 Parabola is elsewhere.

Figure 2 part of public space fenced and added to the house.

Table 1 demography

year	population
1977	42186
1987	69435
1998	96342
2003	119043
2011	144747
Sources : ONS data	

We have developed a forecasting model that provides us with population estimates up to 2050 (Table 2). In 2050 the population of Laghouat would be 247,403 inhabitants that will have to be housed and therefore plan how and where the city should expand according to geographical constraints.

Table 2 demographic forecasts until 2050

year	population
2019	170482
2030	196122
2040	221762
2050	247403

Maps, photos and, above all, satellite images allow us to compare the past and the present, to follow this evolution which often makes us dizzy.

In figure (3), we see in (a) how the city was concentrated on the flanks which shelter it both from possible enemies but also from the vagaries of nature (flooding for example); we also see the extent of the palm grove to the north and south which feeds its population and acts

as a barrier to bad weather and sandstorms. In (b), first the extension of the construct to the last foothills of the Saharan Atlas which represent the geographical limit of extension in this direction; we can also notice the almost total absence of vegetation in these extensions but also the disappearance of these vegetated spaces within the very interior of what was an oasis.
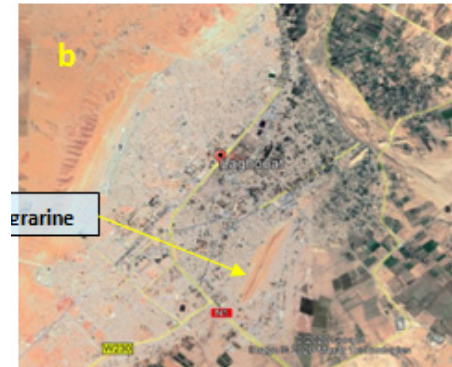

Figure 3 In (a) the city is concentrated. (b) disappearance of the palm grove ; satellite image from 21/12/2018.

This work has two main objectives:

i) to identify the difficulties of a pragmatic and enlightened management of the city,

ii) to propose a strategy for the management of spaces and awareness campaigns and societal education on the sustainability of environments, friendliness and respect for others and the law.

The handicaps to a sustainable management strategy

The concept of "sustainable city" designates the process consisting in ensuring that within cities themselves, and in the connections with their periphery, logics of sustainable development are structured, which limits the environmental impacts of the way of life urban.

Designing, developing and maintaining a "sustainable city" means making it a breeding ground for environmental, cultural, social and economic innovation; it also means promoting the fight against climate change, the vigilant management of natural and energy resources, shared mobility, housing accessible to all, but also better social cohesion and even greater quality of life.

a) A sustainable management project requires achieving a number of objectives such as:

b) strong autonomy in the management of the city,

c) an overall vision of the project, as far as possible shared by all the actors,

d) an innovative approach linking economic dynamism and preservation of the environment,

e) a large place given to the participation of citizens,

f) consideration of social issues.

In Algeria and in the context of work relating to the management of Algerian cities and territories, the question of the feasibility of management in the context of cities and other local communities is increasingly being asked.

In developed countries, according to Frois Pierre and Le Masne Pierre[1] "local public services are confronted like companies with environmental problems. They are subject to a number of constraints (legislation, risks, ethics, various pressures) and experiment with

methods that recommend sustainable development. Local public services have been recognized since the Rio conference in 1992, an essential role for the operation, maintenance of economic, social and environmental infrastructure.The Agendas 21 define programs with certain objectives aimed at enabling human beings to lead a healthy life in harmony with nature. The principles of prevention, responsibility, transversality and innovation apply at the local level through local public services".

We can then ask ourselves the question of what can differentiate the developed West and the poor South in the broadest sense of the term, and in particular the city of Laghouat, a city in a country in the South where the pandemic has havoc on the economy, on companies and on the individual.

In Algeria, as we have just noted, the question is increasingly raised of the feasibility of management in the context of cities and other local communities.

In developed countries, public services are also subject to multifaceted constraints. However, cities are part of a much broader context than the local. Indeed, the principles of prevention, responsibility, transversality and innovation apply at the local level through local public services. But they have been assigned an essential role for the operation, maintenance of economic, social and environmental infrastructure by a global program since the Rio conference in 1992.

Management or management: what to choose for public services

In business, the search for sustainable competitive advantage is the foundation of strategy. Business seeks profit. The main objective of the public service is to offer the citizen a certain number of services without the purpose of profit, in the financial sense of the term. It must also allow the comfort of the citizen in his expectations and in his steps. But the citizen is now in a context of globalization where he compares and evaluates; he sees what is happening elsewhere and undergoes what is happening at home. He thus becomes a client of another kind for the public service; a client with other requirements, other expectations, a client who is no longer content to accept what is offered to him. The administrative department should adapt to this new type of client. But the prerequisite for any decision-making process is the establishment of an information system. H.I Ansoff[2] emphasizes the need for communication (decisional, motivational or other information) for the conduct of strategic, administrative, tactical and operational decisions. We retain here the two requirements of change for the public service: the information system and communication with the citizen. The information plan consists of targeting the information sought in terms of specific needs and choosing between what is useful for the citizen and what is not. The public service must quickly discern between the information that is wanted and that which is not, the information that is needed and that which is not necessary. Above all, he will have to be responsive because, on a global level, information reaches the citizen-customer with unbeatable speed.

In developed countries, and for several years, the reference to "sustainable development" has been widely disseminated on an international scale (Maastricht Treaty, Framework Convention on Climate, Sustainable Development Commission created in France at the General Commissariat plan). This concept, now laden with many requirements (minority rights, fight against inequalities, etc.) initially aims to express the desire to reconsider development methods in particular from the angle of their environmental impact. Sustainable development is used today as a new benchmark to address

a wide variety of issues affecting the long term and the insertion of human activity into the planetary environment. Urban development thinking is no exception. Thus, the sustainable development of cities has become one of the new concerns of associations and certain institutions such as the European Union. Remember that the main objective of sustainable development is not to waste present resources while preserving the living environment of future generations.

In the countries of the South, and in Algeria in particular, we are far from these concerns and this context. The long-term vision does not figure in the objectives or in the campaign programs of future public service managers. But the citizen-voter, future citizen-client has a great responsibility in the choice of his leaders and the future administrators of public services. As for sustainable development, it remains a vague concept, difficult to integrate into daily concerns; here too, the future citizen-customer must be made aware, informed and educated accordingly; in reality, the future administrator should as well.

Useful reminders:

Management: The word defined as the action of acting, it is active administration. The organization is defined as a social system organized to achieve a certain type of objective. It supposes a formal goal, a division of tasks and an attribution of roles, a communication system, a decision-making mechanism, a set of rules for evaluating the activity of which the search for better performance is one of the central concerns. The term management thus represents all the organizational techniques that are implemented for the management of an economic entity. Management mainly concerns the optimization of means, the definition of procedures, and is essentially made up of techniques. The term management is the set of organizational techniques that are implemented for the management of an economic entity. The action of management is an intrinsic and vital constituent of any organization, whatever its activity (market or non-market), its size and its objective (individual or collective). To this end, Denis J.P, Martinet A.C and Silem M.[3] note that: "The term management refers to all the procedures and techniques used to solve a problem or to optimize the resources used in the process of production or in the realization of a project. The purpose of the intervention is to make investments profitable by minimizing costs and maximizing profits. Only economic and financial logic guides the manager's state of mind".

Bureaucracy: The notion of bureaucracy, inspired by the founding work of WEBER (1921), has long been the preferred organizational form for ensuring the performance of public activities. The combination of administrative rationality and technical expertise would protect the exercise of professional judgment in the production of public service activities, while rules and hierarchies would ensure the proper coordination of resources.

Forecasting: The function of forecasting means anticipating and planning by establishing a plan which can be defined as an ordered sequence of actions in order to achieve an objective.

Planning: Associated with the concept of public policies, planning refers to the design of a program or an action "plan".

To answer the question posed, we can say that management is the mode of public service management that would be most suited to the current context of globalization. But the implementation of the related procedures must include a vast awareness and training program both for the personnel responsible for its application and also for the citizen-customer. Without this program, we could not expect tangible

results because of the inevitable misunderstandings, reluctance to change, opposition generated by the fear of restrictive procedures. The citizen-customer, who has lost all confidence in the "system", will unconsciously say to himself that this is only a "marketing" or "flashy" operation with no real effect on his expectations or demands.

Prerequisites for the implementation of sustainable urban management

There are two prerequisites for any implementation of a sustainable management system for spaces and societies:

i.   Initially, a training and awareness campaign

ii. Then the creation of a global information database on spaces, resources, infrastructures, society and tools

The training campaign will be aimed at personnel responsible for setting up, running and maintaining the new management program. It comprises three main parts:

a) A _technical part_ for the staff responsible for creating the databases. Tools for managing databases and information systems, particularly geographical ones, are included in the training program.

b) Another technical part for system maintenance personnel. Computer security is included in the training program.

c) An "_administrative" part_ for the day-to-day program staff. It includes both procedures, approaches, behaviors and attitudes vis-à-vis the public.

The awareness campaign will consist of two parts:

a) A section dedicated to the administrative staff responsible for taking on the new project: the main objectives of this awareness-raising will be to explain the merits of the new program, to inform about the new behaviors and procedures and then to counter any reluctance and possible opposition.

b) A section dedicated to the future citizen-customer with the main objectives of explaining the requirements of the new economic and societal contexts, informing them of the advantages they can derive from the new procedures, reassuring them that the The administration will be mobilized to serve him and listen to him.

The creation of databases will concern:

i.   The population: it will be generated from data from the National Statistics Office. This database should make it possible to assess future housing needs and plan possible extensions of the city.

ii. Spaces: it will be created from maps, aerial photos and satellite images whose distribution is ensured by the National Institute of Cartography and Remote Sensing as well as by the Algerian Space Agency. This database should make it possible to estimate the evolution of built-up areas

iii. Sanitation, electricity, transport and drinking water distribution networks. This database will be produced from plans, maps or field surveys with the assistance of the services concerned.

iv. Infrastructure

v.   Public services

The experience of setting up databases on the city of Laghouat

Many research works have been carried out on the analysis of spaces from satellite images, the management of urban spaces and the management of networks for the city of Laghouat by students from the University of Laghouat or other universities. and supervised by the author, a native of the city of Laghouat. Other works concerned the wilaya of Laghouat as a whole. Among these works, we can cite:

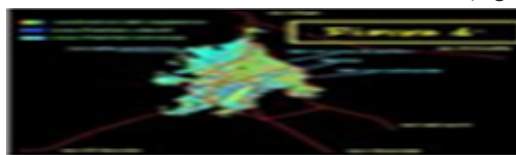i.   The work of Benblidia and Abdellaoui is shown in (Figure 4).

Figure 4 Wilaya of Laghouat

ii. The work of Marmi and Abdellaoui on the sandy veil: (Figure 5) shows the evolution of urban spaces between 1987 and 200 then between 1987 and 2006 using satellite images.
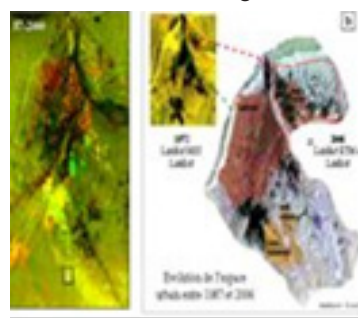

Figure 5 Evolution of urban space.

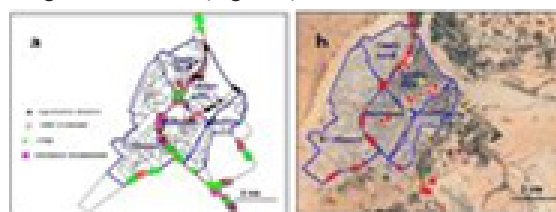iii. The work of Zitani and Abdellaoui on the management of road signs as shown in (Figure 6).

Figure 6 Road sign.

iv. Abdellaoui's work on the management of urban spaces in Laghouat from satellite images as shown in (Figure 7).
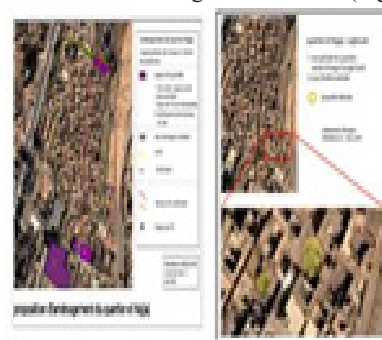

Figure 7 Mmanagement of urban space in the city.

v.   The work of Benkouider and Abdellaoui on road networks (Figure 8).

vi. The work of Chakib Safar Bati Abdelkader Abdellaoui on the creation of a GIS application under Android for the management of construction sites in Laghouat (Figure 9).
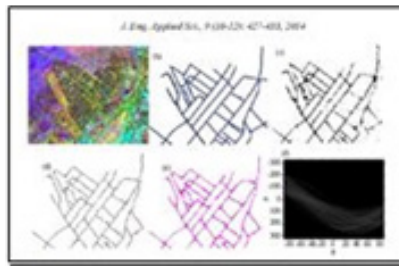
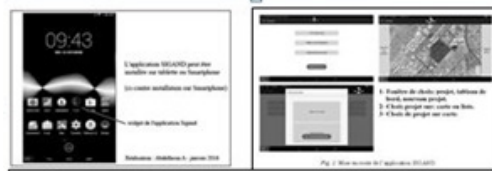**Figure 8** Route network: extraction.

Figure 9 Site management by android application on tablet.

vii. The documents included here confirm that there have indeed been many works on the city of Laghouat; expertise has been acquired throughout this research. This expertise as well as the results obtained can be communicated quickly and easily to the future directors of a global sustainable city project.

The sustainable city management project

Knowing the current to prepare for the future

A preliminary observation is pointed out by a number of reports and various texts, emphasizing the discrepancy between plans and projects on the one hand and reality on the other. One of the causes could be the lack of transversality in studies and projections to associate Space and Society, Technical and Philosophical, Economic and temporal. Perhaps this would be due to the complexity of a context with such rapid changes. Preparing for the future cannot do without knowledge of the past and the present. The actions that make it up must integrate space, society and the means to be mobilized. The current society in Laghouat (like other cities in the country) could be characterized by: the malaise of young people, a blurred collective consciousness, deteriorating purchasing power, a chronic lack of information, citizen involvement which is deteriorating, an increasingly visible bazaar economy, non-compliance with regulations. The governance system, for its part, can be globally characterized by: the absence of a global managerial information system, the inefficiency of controls, the overflow of public services, the absence of citizen information, the insufficient consultation.

A tool to prepare for the future: the SNAT: The National Spatial Planning Scheme in Algeria has set itself three main objectives:

a) Respond to imbalances in the location of the population and activities in the territory: the general population and housing census (RGPH 2008) reveals that 63% of the inhabitants are grouped together in the North on 4% of the national territory, 28 % are located in the Hauts Plateaux representing 9% of the territory. The southern territory, which represents 87% of the area of the territory, is home to only 9% of the population.

b) Making the territories more attractive: the aim here is to strengthen the attractiveness of the territory through the construction of facilities and the availability of services.

c) The preservation and enhancement of natural and cultural capital

The SNAT defines the "program region" as the territory made up of

several neighboring wilayas and presenting similar or complementary physical characteristics and development vocations. Laghouat is part of the regional planning and development space for the Haut Plateaux Center territory, including the wilayas of Djelfa, M'Sila and Laghouat.

Preparing for the future

We indicated above that there are two essential prerequisites for any implementation of a system for the sustainable management of spaces and societies:

i. The training and awareness campaign: the training component should be provided face-to-face for the sake of efficiency; the courses will also be made available via a specialized dedicated platform. The awareness component should be carried out continuously by means of posters, audio spots in the neighborhoods, news flashes through the local radio but also flyers to distribute. To this end, the bus shelters will have to be refitted.

ii. And the complex work of creating a global informational database on spaces, resources, infrastructures, society and tools. Several tools can be used: Excel for statistical data, MapInfo (commercial with license) or Qgis (Open source) for geographic databases, Access for database structures. MapInfo has the advantage of speed of learning but the disadvantage of the availability of a user license; Qgis is free to use but requires learning.

For a pilot investigation area, the chosen GIS tool will allow us to create information bases associating statistical data and their projection in space. Statistical data is provided by private operators, public services or agents carrying out field surveys. Databases may concern, for example, properties, equipment, infrastructures or networks as shown in (Figure 10) taken from the course on land use planning by A. Abdellaoui.[4]
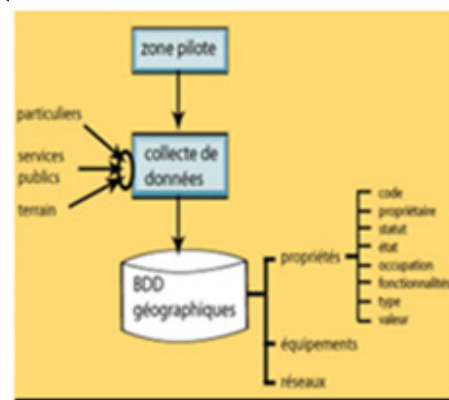

Figure 10 DB for pilot site.

The overall structure of databases for the management of spaces, activities, infrastructures and population can be inspired by the following diagram produced by the author:[5]

The global database connects all the specific databases in a global system; specific databases are not duplicated in this system, which is organized into query and information exchange links. This system allows users with access authorization to enter additional information, perform appropriate processing or access targeted information or results (Figure 11).

The global database must imperatively be supplemented by other annexed databases relating to:

i) the decentralized services,

ii) the offices and institutions needed by the citizen (pharmacies, health centers, doctors),

iii) the companies established on city land,

iv) construction sites dependent on the city or the wilaya,

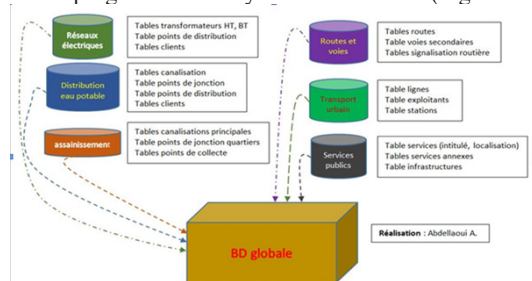v) work in progress in the city. This is shown in (Figure 12).

Figure 11 Proposal for a global sustainable management system(Abdellaoui A).

Conclusion

The countries of the North benefit from a context of development and scientific research that is both advanced but also and above all of sustained cooperation.

The countries of the South, in general, suffer from economic conditions that are very dependent on the North, but also from the fact that South-South cooperation is weak and practically non-existent. The Covid 19 pandemic has also particularly affected their economies. We can also point out a very unfavorable societal context: exacerbated unemployment, bankrupt companies, citizens who have little confidence in the systems of governance, a youth who envy and covet the living conditions and comfort of the North, reinforced in these hopes through the media and the information and communication highways.

If in the North the concept of sustainable development is gradually becoming a daily reality and a requirement, the countries of the South are still struggling with the difficulties of another priority.

However, it is possible to envisage sustainable urban management projects as long as a minimum of will and means are put into it. As we have pointed out, expertise and examples exist and can serve as a working basis. The example of the city of Laghouat is certainly not unique in Algeria. It can serve as a model adaptable to all other cities and can be adapted to other countries in the region.

Acknowledgments

Conflicts of interest

There are no conflicting interests declared by the authors.

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