

THE COMMITMENT OF GEOGRAPHIC DATA FRAMEWORKS AND REMOTE DETECTING IN URBAN ADMINISTRATION: CASE OF URBAN OFFICES IN MOROCCO.

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Abstract— Morocco has regarded a sturdy growth in urban populace because of population growth, urban migration, and many different social, financial parameters. This urbanization introduces quite complicated phenomena, generating a multitude of problems: transportation, lack of social facilities, environmental degradation, control of the urban area, and so forth. The urban (1) agencies have been created to control this phenomenon thru the improvement of making plans files defining the rules for land use and monitoring of city sports. Geographic information structures (GIS) and Remote Sensing at the moment are positioned as effective equipment for selection help, particularly as regards the control of the area. the combination of the spatial dimension, way to GIS, permits locating data and better organizing facts in an extra consumer-pleasant way. a few procedures inside the urban corporations are based on fashionable geographical documents.

Keywords— Urban Management, Geography, Information System.

1. Introduction

All through the 20th century, Morocco has skilled a completely robust growth in urban populace due simultaneously to populace increase and rural exodus. similarly, to this phenomenon, there's a sizable dynamics affecting the city network itself involving a large improvement of urbanization. The number of municipalities (2) accelerated (three) from 29 in 1971 to 45 in 1982 and are these days more than 240. This urbanization, which introduces quite complicated phenomena to the town, has generated problems in the control of an area and a large number of problems ensued:

1. Difficulty to control making plans of cities;
2. Circulation and transport;
3. Environmental degradation;
4. City control

Moroccan urban ensemble seems well labeled: 3 towns with over 1,000,000 inhabitants (Casablanca, Rabat - Salé and Fez); a dozen fundamental towns with over one hundred,000 inhabitants whose nearby capitals are Marrakech (870 000 inhab.), Meknes (500 000 inhab.), Tangier (500 000 inhab.), Agadir (500 000 inhab.) and Oujda (260 000 inhab.); medium-sized towns revolving across the most important facilities; 40 small cities and many nearby facilities.

The speedy populace boom which marked the united states during the last four a long time has had a main effect of hectic the imbalances between regions and uneven development within the same city area. The comparison has persevered to deepen between negative and rich vicinity between prepared planned areas and under-ready spontaneous settlements. facing these demographic and urban troubles, the management has steadily mounted a series of institutional arrangements and making plans contraptions whose stated

reason is to control and rationalize urban area.

But centralism stays the foremost characteristic of all of those administrative preparations, both in phrases of company and in phrases of skills. the executive network in place intends to ensure supervision of the territory and objectives to allow the centralism and their territorial extensions control over selection-making and useful resource allocation at a town level.

Urban businesses handle each day huge quantities of geographic data. To this cease, the issue of implementation of a geographic statistics device is crucial. This examine targets to draw up a document on city management in Morocco and deepen, theoretically and almost, the implementation of GIS for city control to automatically generate facts notes inside those agencies. the way to restructure the existing spatial databases to release a GIS software to renovate urban control?

2. Cityscape in question: evolution and challenges of the Moroccan town

Morocco urbanization boom charge has improved (four): 29% in 1960 to 35% in 1971, 43% in 1982 and 59% in 2012. based on that information, we are able to say that the urban project is one of the most important problems of the modern-day duration as nicely for evolved nations than for developing nations. This boom implies growth in housing needs, system, services, schooling, jobs ... and the social and spatial adjustments, but extra importantly, it encourages rethinking the layout of the making plans of our cities and the terms of urban management.

The city groups have been created to control this phenomenon through the status quo of making plans files defining the policies of land use and control of city activities. In latest years, a few city organizations started the use of the statistics and communications era (ICT) and new technologies of representation and area control (GIS, remote sensing,) to automate and computerize their services due to the progress of urbanization in Morocco. The developing quantity of information calls for using the ultra-modern technology, especially spatial size... urban organizations carry out the main obligations of GIS specifically facts, production and choice on one hand, and produce cartographic files, on the opposite.

3. The role of city companies in Morocco in urban management

The 30 urban corporations accrued understanding and territorial engineering to the factor wherein they have become facilities of multidisciplinary sources and talents in the discipline of urban making plans. The city agencies have appeared inside the Moroccan institutional panorama within the wake of the administrative reforms attempted in Casablanca, following the city riots of 1981 and 1984. Their shape is of double measurement: political and technical. that is to ensure higher social manipulate by way of solving the primary troubles related to metropolis improvement.

The urban corporation has vast prerogatives: gambling the position of a public layout workplace and offering assist to nearby authorities within the thinking and planning techniques, regarding urbanism, territory improvement and “management”.

The employer is held liable for:

Accumulate and circulate information approximately the urban improvement of the prefectures and/or provinces in its territorial jurisdiction.

Behavior necessary research for the established order of city development grasp plans (SDAU) and reveal the implementation of the guidelines defined therein.

Put together regulatory planning files projects, consisting of zoning plans, improvement plans.

Behavior improvement projects studies of unique sectors and executes all projects when it comes to the public interest.

Offer technical assistance to neighborhood authorities in urban planning and development and to public and private operators.

In France, the planning employer, research and have a look at an organization, was founded on the initiative of local authorities (particularly in big cities) to serve as a support device inside the definition and harmonization of public guidelines for development and making plans. The city business enterprise of Morocco changed into created by way of the state, generating a demanding climate, in particular with the communal councils acting reluctantly in appreciate to this institution which, of their opinion, "monopolizes the framework on the production of urban area "(Chouiki, 1996) at the cost of the powers vested with the aid of their communal charter. even though this kingdom of anxiety eased over the years with the generalization of city businesses, to turn out to be an irreversible fact, the pulling of competences nonetheless exists and the friction among those, the elected ones and the territorial government persist, especially due to troubles associated with city management.

Considering the demands of territorial competitiveness, the worries and priorities of the urban enterprise are to be reconsidered to transform it right into an actual vector of understanding and spatial development. In doing so, an institutional reorganization is essential to conquer the vicissitudes of urban governance and build or strengthen the way of life of synergy between the numerous actors.

City boom is accompanied through the proliferation of data that describes the city territory and its inhabitants: vicinity of activities, means of transportation, system, inexperienced spaces, property and asset management, and so forth. a lot of these information relates in one way or any other to a location attribute, whether it's far reachable inside the form of particular registration or in the form of aggregation available in line with predefined divisions. Their visualization in plans or maps remains one of the best and most pertinent ways of apprehending them (Steinberg, 2003).

The interest of the localized statistics in GIS can play a key function, first as a research device, however additionally inside the everyday paintings of the urban organization. regardless of the dearth of the usage of operational GIS in urban organizations, renewed interest is seeing the day for using that equipment.

4. Using GIS in city agencies in Morocco

these days, the management of a city encompasses fields of competence of a extraordinary extent. The populace is constantly developing, the want for new sources and infrastructure follows. further, numerous municipal offerings have increasingly big powers, and sarcastically, they also see themselves greater dependent on every other. hence, policymakers need tools to make sure coordination of those actors,

specifically as new environmental and sustainable improvement standards are introduced. this indicates new and restrictive rules that make the choice extra difficult. Given this reality, GIS is proving to be effective urban control tools.

The mixture of pc and virtual mapping provides decision makers with the manner to make wise choices (Prélaz-Droux, 1995).

Gaining knowledge of information has always been a prime difficulty at all tiers, This trouble is essential, particularly with reference to land management. The explosion of the latest technologies and IT in all sectors indicate an extra fast improvement of global databases. The management is filled with facts, usually with spatial characters, really exploited the use of databases however not oriented to the spatialization of the phenomena (Didier, 1990). As such urban control, in fashionable, can't escape this trend. The statistics blanketed on this discipline are mainly varied and transdisciplinary and require the usage of databases to try to pass numerous portions of records among them and thereby generate new information and ideas. records structures develop thus right away with the institutions that control each day urban and environmental phenomena. however, these spatial connotation systems aren't gift or as a minimum weakly used for land control (area and Baduel, 2004). For organizations, desirable urban management goes one manner or any other by way of true manage of facts. GIS and faraway sensing are necessities gear for the selection-makers (Souris, 1986). Moroccan urban organizations use GIS in processing their data.

5. GIS utility example in Moroccan urban businesses

Geomatics aims to manage spatial information and uses technology and technology related to its acquisition, storage, processing, and dissemination. science and geomatics technologies are used for surveying, cartography, geodesy, photogrammetry, far-flung sensing and computing. Geomatics therefore no longer handiest offers the approach for obtaining localized digital records (geodesy, photogrammetry and far-flung sensing), however additionally the management tools, analysis, and illustration of geographic records.

On this context, GIS represents the synthesis of the advances in virtual processing of geographic information as they permit putting georeferenced facts acquired through diverse geomatics techniques in a coherent framework, studying and mapping them. Didier Michel (1990) defines a GIS as "a hard and fast of records identified in space, and established in a manner to allow the extraction of syntheses beneficial for decision making." This definition lends properly sufficient to be the role assigned to this device in our observe. today, GIS mark their presence in several professional organizations: governments or nearby collectivities, environmental studies places of work,

The city corporations meet the primary obligations of a GIS: facts, manufacturing, and decision. From this angle, GIS is a tremendous tool that allows for an urban employer:

1. integration, control, centralization into databases and updating, if essential, of all the information involved inside the change, together with map statistics, photogrammetry, remote sensing and socioeconomic;
2. archiving management plans in vector digital format for upkeep and inter-derogation of these plans;
3. session and browsing control plans (7) (Fig. 1) and regulatory databases;
4. automating the era of the information observe;
5. session of the exemptions;
6. management and early session of offenses;

7. sharing and dissemination of geographical facts with both outside and inside access to an agency that would simplest be viable with the aid of GIS net generation. within the case of urban companies, coordination between the one-of-a-kind divisions, departments, and services have to be ensured, it ought to additionally ensure the dissemination of statistics to the public.

This listing is far from being exhaustive. using GIS is very relevant to automate a good deal of the commercial enterprise methods of urban management, along with mapping. The city organizations use GIS for the combination of improvement plans in a database and its operations in a shared environment to robotically generate notes of intelligence.

6. Computerized era of records notes inside urban businesses

As soon as the regulatory files, consisting of the improvement plan are hooked up, wide dissemination of the provisions set out therein. The facts notice is the executive report issued solely by using urban businesses that inform citizens (the proprietor or his representative) on the regulatory provisions of the making plans documents (control plan) for one or extra terrains, approximately the allocation reserved for the land in query by using planning documents (housing, industry, alternate ...) and the regulations relevant to the place where the sphere is placed.

This file facilitates the orientation of the citizen within the consistency and task design to gain on the land in question, and avoids all technical and administrative barriers which commonly originate through a lack of knowledge approximately:

1. The placement of the land relative to zoning;
2. Urbanistic standards to be found in the course of the task;
3. The technique for the constitution of statistics.

The information word is part of the city organizations activities and is of brilliant importance as it lets in for the corporation, the acceleration of education approaches, and for citizens annoying to recognise the guidelines of using his land and contribute to city improvement. that is the end result of the intersection map facts (images settlement documents ...) on one facet and documentary facts (agreement documents, assisting reviews ...) on the opposite. To generate this notice, it have to first discover the requested parcel of land at the zoning plan from its coordinates or to discover the variety of its land title, then determine the spatial intersection of the plot with unique areas of the map (eg with the tourist region, the economic region, the habitat location, inexperienced areas, public centers, roads ...). in the end, the data notice is supplied to the applicant

7. Note of facts management device within the urban organization

Maximum urban groups use AutoCAD software (8) to generate the statistics note. The accountable of this project locates the plot from its geographical coordinates on AutoCAD, then he visually determines the different regions that make up the plot (ie spatial intersections with one-of-a-kind regions of the development plan) and regulation which defines the regulations for land use and creation relevant to each area. some of the constraints, we can mention the issue of determining the regions that make up the parcel, the lack of connection between the alphanumeric database and geometric items and formatting of printed documents (states provided to the applicant).

but, these kind of constraints within the AutoCAD management of records notes disappear with using GIS that integrates in the identical tool techniques of mapping and database management.

the use of GIS for producing facts notes

presently, there are several software program equipment to increase a GIS. The geometric and alphanumeric statistics is saved in the same database (Database control gadget: DBMS Oracle 10g), the manipulation (visualization, question, add, delete, update ...) of geometric information is controlled via a cartographic platform ArcGis (9) (Fig.2).

The conceptual information model contains the following entities: "facts" (containing records about the utility files of the intelligence word), "seekers", "plots" (containing the references and details of the plot, the zoning plan, municipal and provincial limitations). The interfaces of the utility (figure three) proposed are designed to facilitate the control of the be aware statistics. The manner for the use of this utility is as follows:

1. loading map (zoning plan) from the utility;
2. localization of a parcel from its coordinates, it is land identify variety, or document variety if this records is already entered in the database;
3. the drawing, of the plot on the map mechanically generated by means of the device and the calculation of its spatial intersections through the diverse layers of the map;
4. The regulations of the parcel, the zoning map and other documents referring to the facts word.

GIS save, analyze and show data including those of spatial references. those structures have attracted terrific hobby in many fields, in particular within the development of the urban area. however, on the drawback, it is recognized that the implementation of a GIS generates good sized prices in the acquisition of software program, hardware, and records acquisition know-how.

In this text, we presented the GIS application that turned into developed for city control, in particular, the management of the facts word of the city enterprise. This software has progressed the overall performance of the service responsible for dealing with the data to be aware in phrases of time and reliability of the information provided to candidates.

8. Conclusion

Urban control and making plans are essential problems for a rustic concerned for its sustainable improvement, namely Morocco. The companies in price of these tasks nonetheless face problems associated with the accelerated volume of facts to manipulate, enterprise tactics that regularly seem sluggish and uncoordinated, incoherence, specifically as regards the geographic statistics, the sharing of problems and simultaneous get admission to records, loss of time because of some manual processing, archiving and scaling, and many others.

This requires the use of current way of land control inclusive of GIS, geographic databases that facilitate traditional work. the use of GIS should constitute a enormous advantage in time. city management is a complicated system that calls for a full-size base of records and coordination among unique actors (which

includes urban corporation, prefecture, and municipality) of urban area. In developing international locations, this control is made extra tough by means of the lack of monetary assets and technical skills. for this reason, the conventional equipment of the improvement do no longer have the favored performance. contraptions including GIS substantially growth the phenomena of city control. The achievement of the GIS mission might be measured with the aid of the willingness of town stakeholders to work together for a shared regional challenge on not unusual themes. similarly, the trade and sharing data will higher qualify them, keep away from duplication and in the end boom performance via pooling efforts.



Figure 1:-Extract of a PA scanned

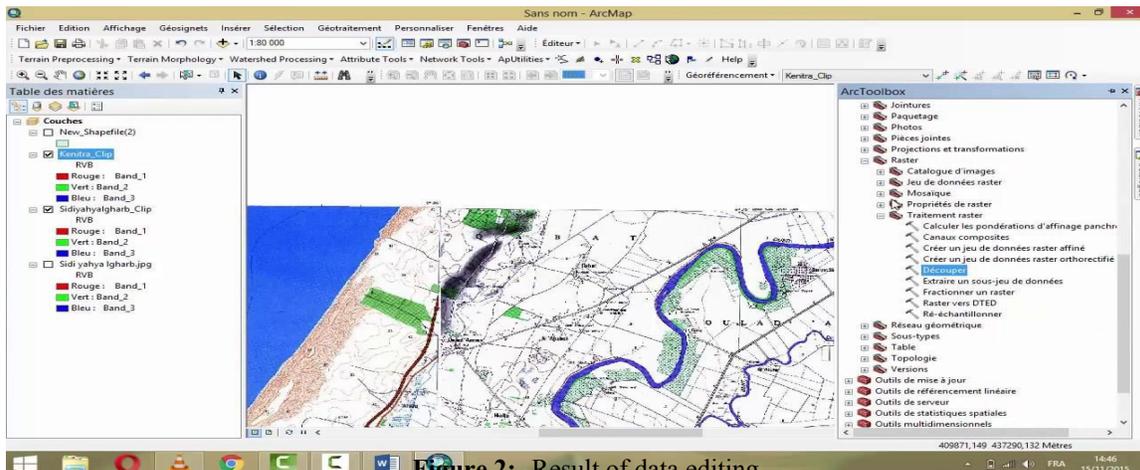


Figure 2: -Result of data editing

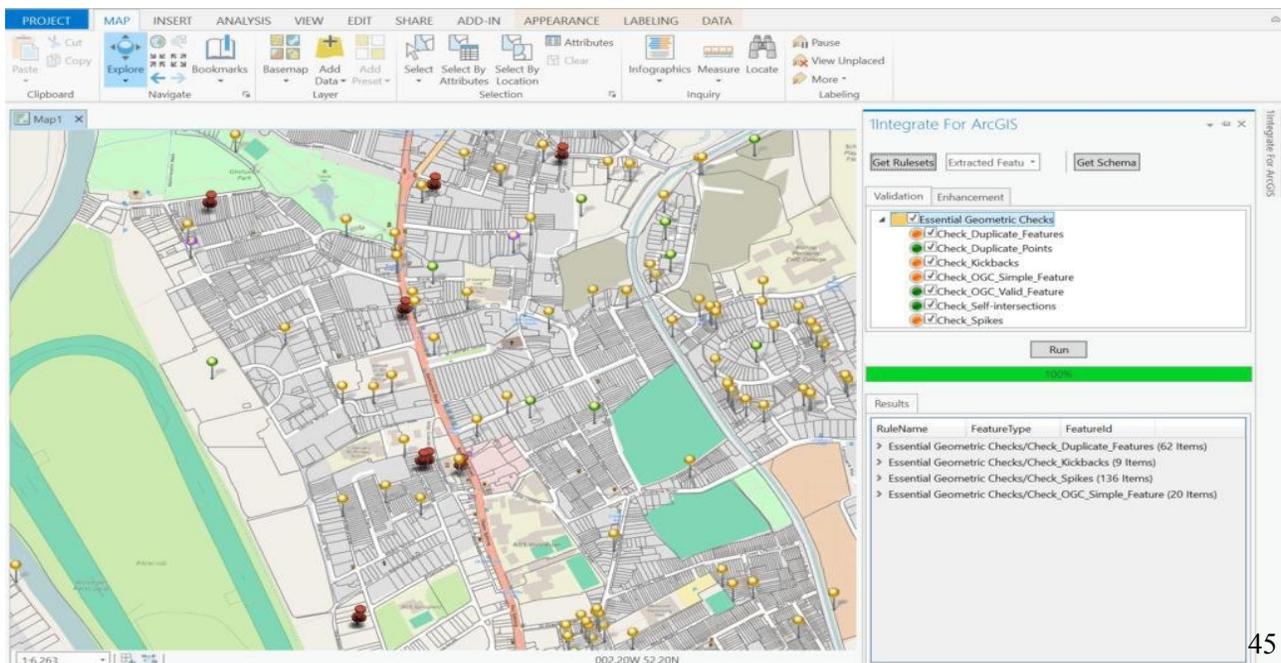


Figure 3:-Example of the management module of the information note**5. References**

- [1] Urban agencies are organizations at the provincial or regional level, responsible for management and planning, ensuring territorial engineering. This involvement is essential. Each agency has an urban territories which corresponds to a number of prefectures and / or provinces to which belong the urban and rural towns
- [2] Municipalities are local authorities under public law, with financial autonomy Source: High Commission for Planning (HCP, 2014) <http://www.hcp.ma>. Source: High Commission for Planning (HCP, 2014).
- [3] Article 3 of the Dahir No. 1.93.51 of 10 September 1993 establishing urban agencies. Dahir denotes a royal decree in Moroccan law it means the seal of King affixed to the texts of laws voted in parliament.
- [4] The urban agency gives an assent on the projects of subdivisions, groups of habitants and constructions, the president of the communal council must obtain the assent of the urban agency before deciding and giving the authorization of said projects.
- [5] The development plan is one of the regulatory urban planning documents. It defines the right of land use within the territories to which it applies. It is an instrument that transforms the orientations of the SDAU,
- [6] Autocad is Computer Aided Drafting (CAD) software created in December 1982 by Autodesk.
- [7] 9- ArcGIS is a set of geographic information software developed by the American company Esri (Environmental Systems Research Institute
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