

Facing Uncertainty With GIS, Using Non-Normative Tools To Plan Non-Normative Territories. The Case of Dropull

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Abstract

Uncertainty represents an Oxymoron in planning. The truth is that the world, cities, and people have never stood still; they are both complex and indeterminate; therefore, uncertainty refers to the ongoing process of the future. (Klosterman, 1978) GIS enables access to large volumes of data and is a tool for effective decision-making in urban and regional planning. Insofar as it is about predicting the future and anticipating change and addressing both the past and the future of its sites, planning is a process that faces uncertainty eventually (Abbott, 2005). Planning is a form of decision making, which involves data, people, physical territory and social dynamics. (Friedmann, 1987) This paper inquires a step further: what happens with GIS after the plan has come to its full circle. The case of Dropull municipality represented quite a challenge since the newly formed municipality faced a lack of data, informational gap, territorial disparities, and mobility barriers. In attempts to better address these challenges, the team of Polis University, which assisted in the making of the plan, established the possibility of using a tailor-made geographic informational system model as a planning methodology, among others. GIS is defined as an intelligent tool in planning, aimed to develop and support highly complex activities. These challenges were addressed by using GIS mainly oriented towards online data records and overlay of information to bring together both quantitative data with its geographical location. In light of a special emphasis on the question of what happens after the fact, this paper prescribes to Dropull municipality must use this tool to provide both transparency and continuity of information to any future plan attempt.

Keywords

Geographic informational systems; planning methodology; planning scenarios; uncertainty; multilevel decision-making.

Uncertainty in Planning

The new Municipality has brought together three former administrative units: Lower Dropull, Upper Dropull, and Pogon. These administrative units host 41 settlements throughout the territory. Currently, Dropull is sitting in between two significant economic and cultural areas, the city of Gjirokastra and Ioannina, which share similar cultural, historical and trade opportunities that benefit Dropull as the gateway connecting these two centers (University, 2018). Dropull municipality represents a small territory in the south-east of Albania. As a newly established municipality, composed of three former administrative units that hardly cooperated in the past, Dropull started the process with no data, little understanding of its newly acquired territory, and the challenges it faced. The uncertainty of the process that followed two years of planning and analysis was in continues change. The experience was challenging for both Polis University and its new mayor.

This planning process was an initiative of the local municipality which unhesitatingly viewed the plan as a necessary step to solve many problems, and at the same time establish a vision and clear development objectives. The process of planning and analysis had to deal with uncertainty, and it provided challenges to both the Polis team and Dropull's new Mayor; the first was related to the lack of data, informational gap, territorial disparities, mobility barriers, and old cartographies that did not represent the territorial changes for at least ten years. Secondly, being a newly established municipality in a new territory (attributed to size), the population data and territorial information and needs were a "mystery" to both the local government and its mayor, which faced challenges in both planning capacities and human resources. Dropull municipality shared these and many other problematics but was not part of this first initiative. In 2015, due to a need expressed by the municipality, Polis University agreed to cooperate and provide the necessary capacities for developing a comprehensive local plan.

Why use GIS in planning Dropull

To better understand the role that GIS has played in the planning process for Dropull municipality, we must first comprehend the planning context. Planning in Albania has shifted from an urbanistic approach to a comprehensive one, changing the planning process radically. There are many theories as to why the country undertakes this change. Some attribute it to the long-term aspiration of becoming a part of the European Union. Others highlight the need for planning territories in a more realistic way that helps the municipalities better manage their assets and establish development goals (Çobo, 2010). The new Municipality has brought together three former administrative units: Lower Dropull, Upper Dropull, and Pogon, these administrative units host 41 settlements throughout the territory.

Currently, Dropull is sitting in between two significant economic and cultural areas, the city of Gjirokastrë and Ioannina which share similar cultural, historical and trade opportunities that benefit Dropull as the gateway connecting these two centers (University, 2018). It is important to set the background of why GIS is such an important step, the tools itself being quite common and used widely within the planning process. However, in the context of planning in Albanian cities we must keep in mind that the information and data are still undergoing a shift from the physical documents to digital ones. Having no geographical reference of the territory up to date causes quite a gap in data and ownership overlap¹.

The population number of this municipality remains the biggest challenge, and besides the internal migration and immigration, the population numbers have decreased significantly.

In the 1990 census, the municipality estimated twenty thousand people living in the territory. The second population census took place in 2015 and estimated only 60% of the population of the '90s. The municipality of Dropull has not accepted the 2015 census as an official enumeration since they did not take into account the seasonal tenants, people that work across the border, and yet fully pay taxes, take care of their homes, and participate in yearly activities in the municipality.

There are two main factors that pushed Dropull municipality to use GIS as a planning instrument. First, it was because Dropull municipality faced information gaps as a consequence of lack of data. The information of territory was represented in cartographic maps and excel tables dome more than a decade ago. The normativity applied in creating these data was a process extended in time that was not able to keep up rigorously with the dynamics of change of the territory. The second factor was the creation of the legal bases that established the National Geospatial infrastructure that was initiated on the 28th June of 2012. This law was to create a common, national geospatial infrastructure in the Republic of Albania, organize their operation and function, and define the methodology of how to collect, create, update and process the spatial data.

This was also a legal requirement of the planning process, making it indispensable for the plan to have a common geodatabase that unified all the data of each Municipal plan. The purpose of this requirement was quite simple, since it was addressing an important issue. First the data had to be unique (taking into consideration that this information came from many different sources) and precise to reflect the current condition and geographic location of this data.

GIS may be described as a simple applicative tool, applying easily preset methodologies. However, in the case of Dropull,

¹ Of course for the purpose of this paper we trying to simplify the matter as it is quite an agglomeration of years of territorial inefficiency and lack of planning.

GIS played a more significant role. The methodology built in cooperation with local actors, the experts from Polis University customized this methodology into a model that later on will answer many of the development dilemmas. The methodology relied mainly on using a GIS Multi-criteria analyses where 200 documents from ministries, former local offices, and data collection were brought together into a single platform. Using the GIS Multi-criteria analyses allowed both the people to understand how the information was confronted and confirmed but also the team to understand the importance of specifying accurate data. After the analyses of the documents, they were categorized into 50 shapefiles, each into a different category.

Considering one attribute that had 19 shape-files tell you the location of the protected monuments, but none of them being accurate, we would use interpolation instruments within proximity to starting point in GIS to establish the most possibly accurate among them. As soon as this process was terminated for 15 indicators - *Population, infrastructure, infrastructure conditions, transport, number of buildings, buildings quality, services/businesses, urban area, natural areas, water areas, infrastructure area, water management, municipality surface, monuments* - two teams traveled through the territory and confirmed the geographic location of data, coordinates and attributes related to the indicators.

Although this process is considered quite normal in any planning process, the case of Albania and therefore Dropull is quite different due to the overlay of property dispute, lack of updated data or lack of any data at all. Admittedly achieving this process was not hard, but it was the first time that GIS was used, guiding a method established from the existing data, using GIS to establish transparent and long-term database.

Past the Plan

This planning process was officially terminated in 2019, when the material approved by the municipal council was delivered to the NTPA², and is waiting the National council of the Territory to be fully approved. The process is later guided to give the local government the possibility of sustainably management of the territory to start compiling the Detailed local development plans, an initiative that works with the smaller territorial division, under the directives of the plan, fulfilling the development criteria. This process of drafting the plan was under the umbrella of Polis University, who provided a team of experts and young professionals working with territorial planning and GIS (territorit, 2020). During the continuity of the plan and after the team of Dropull municipality composed by two topographic experts received a three rounds of training sessions divided into 6 months following simple principles, firstly

helping to understand and navigate the platform, secondly how to find and update information and lastly how to share this data periodically with all the institutions. The role that GIS and data play within the planning process is quite clear, as stated into the Council of Ministers. Decision: ["Nr.402, date 20.5.2020 "Për miratimin e dokumentit të politikave "Për qeverisjen e sektorit të informacionit gjeohapësinor në Shqipëri, 2020-2030"], GIS is an instrument that helps increase transparency, provide continuity through metadata and unify the territorial data for the entire country. Using GIS is a legal requirement, specified by law and left to both municipalities and institutions to update. The main purpose of using GIS lies in the continuity of the information, in the unification of the information source and the creation of a digital catalogue that can address both the past development and help guide the future one. As specified in the role and obligation of local municipalities and their experts this obligation falls under their job description; it is their responsibility to update and preserve the information. (Vendore, 2015)

Methodology

Inquiring into the state of GIS after the plan will consider the institutional evidence and observation of the continuous planning and development process. Evidence from other municipalities illustrated in the development of the local detailed plan and a number of interviews with planning professionals and local experts should guide the process. The first part of the methodology will consider the request of and process the local detailed plans, and what base of information is used to send forward these local detailed plans. During this part of the inquiry we have accessed a national platform and gathered information from three municipalities and actors that are currently participating or have participated into the drafting of the local detail plans. The table illustrates the data collected from the NTPA web-site and the contacting of actors that are currently drafting the LDPs.

Interviews: were divided into two groups: the actors currently engaged into the LDP process and the actors that represent NTPA as experts in the field of data collection and processing. The first Group was subjected to an open question that was conducted via telephone communication, keeping in mind the limitation of Covid19 situation.

The telephone questionnaire was composed of sixteen questions divided into two categories. The first consisted of closed questions that would be answered by yes or No. The second category consisted of questions that were open, with the intention of giving the interviewee the possibility to explain one's experience and point of view. All the questions were submitted in advance giving the interviewer the time to collect information and be prepared.

² National Territorial Planning Agency is the institution in charge of managing and coordinating the General Local Plans drafting process.

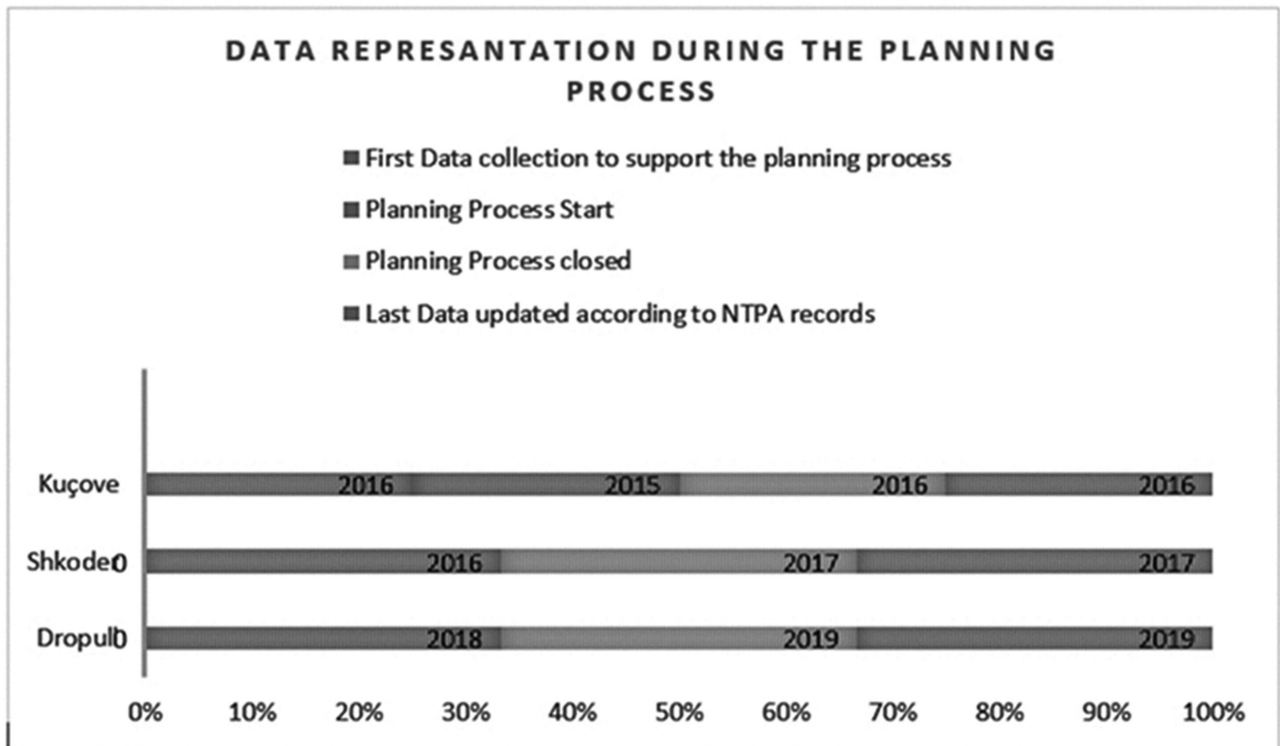


Table 1. Findings provided by the author inquiry into the planning data 2020, interview first outcome.

Interview Findings

Although the planning process has reached its first mark³, the municipalities like Shkodra were re-requested a plan review, due to the five-year specification⁴ allowed by the planning law. The case of Dropull has finished the process and overall approval but was reviewed before the final approval seal and its now waiting the National council to legitimize that approval. Our final case, the Kuçova municipality, has gone through the process and its now developing the LDP. Findings from the interview have helped this inquiry to understand, how and why the GIS are poorly used after the planning process. These findings were a direct outcome of the interview process. As we have previously established, it was a legal requirement for the municipality of Dropull to have 1 GIS expert trained for the continuity of the process, the municipality of Shkoder 2 experts and the Kuçova municipality 1 trained expert. However, more than five years after the planning process is over not one of these municipalities had someone on their staff able to manage or update the GIS database these municipalities built during the process. Only two of these municipalities have officially started the development of LDP process, and during this inquiry, we

have evaluated some of the main elements that these municipalities need to use during the drafting of the LDP.

Conclusions

Even though in terms of hierarchy the General plans stand above the LDP, the LDP must of course reflect the objectives and development criteria set by the LGDP. However, after the official planning process was over the database was considered “finished” as a tick in the box rather than become an instrument of the planning process and a way to monitor the development of the territory. The first responsibility to overcome this barrier falls upon the municipality which is responsible for the updating of the database and after that to the NTPA, which in theory should only coordinate the process, but since the municipalities capacities are still developing NTPA assists the process step by step. However, trying to remain loyal to the plan and its objectives is not the same as planning for the future in a comprehensive way. The data enables the plan to be contextual and coherent with a territory thus making the data very important. The main barrier toward using GIS stands into acknowledging the importance of GIS as a planning instrument, yet the

³ The considered case studies have past the first planning process and either have been through the review part of they are continuing with the LDP.

⁴ Law nr. 104 date 13.05.2014 specifies that the plan can be reviewed in five years of their drafting time because of territorial changes that may take place.

⁵ The challenges that this represents are mainly legal, as to rehabilitate the one road, a cooperation between the two municipalities must happen.

⁶ National Institute of Statistics in Albania.

⁷ General Local Territorial Plan.

⁸ General Local Territorial Plan.

Municipality	Data Updated	Land Use	Buildings	Infrastructure	Ownership
Shkodra	2017	NO	NO	NO	NO
Kuçova	2016	NO	NO	NO	NO

Table 2. Upgrade of Data during the LDP process for two case studies/ authors data elaboration.

inquiry in the field has revealed that the municipality itself sees GIS as nothing more than something the law dictates them to fulfil. Failing to understand importance to this instrument has caused two main problems clearly reflected by the intervening process. The first problem is the freezing of data which can cause long term disputes about intervening in the development process. The second problematic acknowledged by this inquiry is the overlay of inaccurate information making it hard to see development patterns emerging. As a reminder to both the municipality and NTPA, GIS is an instrument that is used widely in urban planning, but it is an expensive and time consuming endeavor to put together necessary data to manage and analyze the territory.

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