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**TRENDS IN CRIME MAPPING: THE CHALLENGES AND
PERSPECTIVES OF INTEGRATING CRIME MAPPING
IN LOCAL SAFETY AND GOVERNANCE POLICIES**

Patricio Tudela (Ph.D.)

Trends in Crime Mapping: The Challenges and Perspectives of
Integrating Crime Mapping in Local Safety and Governance Policies

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Center for Police Research and Development
Investigative Police of Chile
General Mackenna 1314, Santiago
Phone: 5445767 · Fax: 5445388
cidepol@investigaciones.cl
www.policia.cl/cidepol

Introduction

The transfer of political power to communities for solving crime and insecurity problems is not an easy task. Information management at a community level is necessary. Under this perspective, the use of GIS for crime mapping creates opportunities for a better performance in public safety policies and in crime prevention. The lack of public capability to guide and support the transition from “crime mapping in the police” to “mapping with the community” for local policies is an increasing demand.

What obstacles and limitations are associated to the introduction of GIS at local government and community level? How would GIS contribute in the materialisation of governance and community empowering? What opportunities and challenges arise from its introduction at community level?

In this paper, I will analyse some trends in using GIS for crime mapping and public policies. I consider some Latin American cases, particularly from Argentina, Brazil, Chile, Uruguay and Colombia.

In this presentation, I will discuss the following questions:

- How can we carryout information management at local level?
- How can we involve the community in the information management process?
- How can we put together community, government and police to prevent crime through information policies?
- What kind of information and tools are useful for encouraging key actors to work together?
- Considering the present trends in crime mapping, which will be the next issues at community level?
- Which current trends should we promote?
- Which topics will require more exploration, fostering and development?
- What should we do to improve the use of GIS in public policies?

I. Relevant Concepts

Whether as cause or effect, urban insecurity today links key concepts such as quality of life, citizenship, local democracy, equity, human development, performance and public policies. These are aspects to be considered when designing public policies to prevent and reduce crime and violence and their consequences like fear and lack of confidence in the police, for example.

One technical challenge of a public policy supposes a transition from a service receptor society to an active community, with a leading role, supported by efficient authorities and public and private organisations. Governance has a lot to do with this.

There is a new way of understanding insecurity as a “community problem” and the role of practitioners, policy makers, stakeholders and citizens.

a) The most evident change relates to law enforcement services and their “social role”: from prevention and crime control to fear and also community issues.

b) The second change refers to community and local government roles: participation, efficiency, coalition, governance and government’s quality are increasingly important. A person is no longer an object, but becomes a subject.

II. Frequent Uses and Limitations

GIS is a computer tool which allows us to better understand social phenomenon like criminality, violence and fear, and to work on solving them. Its use enhances planning and problem solution management, strengthening the relationship between police and the community.

But the use of GIS depends on factors and circumstances beyond the tool itself, such as the absence of indicators, monitoring and planning. There are also obstacles in information processing. However, it does not depend only on the police. The local government’s capacity is usually very limited.

One can summarise the panorama of trends for Latin America in few words.

In Latin America, particularly in some cities (Belo Horizonte, Montevideo, Buenos Aires, Santiago), GIS applications in policing started recently. There is a consensus that GIS and crime mapping provide enormous potential to identify criminal activity and to enforce specific police guide lines for action. National and local governments, as well as civil society organisations start recognizing the value of maps and spatial analysis¹.

The introduction of GIS in police organization helps to change the paradigm of public safety management. In other words, it is useful for community policing processes. In Latin America there is a trend to rethink the police, specially its social role. So far, quality of response, accountability and community empowerment constitute new demands and challenges for police organisation, different from the traditional one.

The development, implementation and exploitation of GIS and crime mapping demand the overcoming of different stages and the solving of problems like the following:

a) Problems related to police information systems:

- Data quality;
- The insufficient development of analysis models;
- The scarce socialisation of police acting principles oriented towards problems and results, and
- The insufficient familiarisation and exploitation circuit between strategic analysis units and operation units.

¹ Tudela, Patricio. *Experiencia de Chile en el empleo de tecnología SIG en los procesos de mejoramiento de la gestión policial y la implementación y evaluación de programas de prevención social y situacional del crimen y la violencia*. Intervención en Taller sobre "Usos y aplicaciones de sistemas de información georeferenciado (SIG) en Chile y Brasil" Banco Interamericano de Desarrollo, Washington D.C., Noviembre del 2003, 41 págs.

http://www.iadb.org/sds/SOC/publication_546_s.htm

- b) Problems among institutions (capability, co-ordination, approach).
- c) The design of a co-operation and information exchange framework; and
- d) The development of co-production strategies between practitioners and institutions.

However we have to consider that the cognitive, organisational and structural characteristics in the police and local government are obstacles for a more extensive and intensive use of GIS. Briefly, it is possible to mention the following:

- a) Lack of training and analysis capability.
- b) Technological imbalance.
- c) Incomplete and restricted geographical codification.
- d) Gap between practice and theory, and approach limitations.
- e) Lack of information on infrastructure, demographic and socio-economic characteristics or profile.
- f) Will for sharing data and inter-institutional co-management.
- g) Local leadership problems and shared roles between police and local governments.

III. New Trends and Innovative Experiences in Local Management

Nevertheless, one can also say that there have been experiences, which open new horizons for preventive strategies with two key components: building the community through empowering and governance.

Today we face a transition towards an intensive use of GIS at a local level. In the last years, the use of GIS the involvement of non-experts in the use of this tool has been increasingly frequent. This tool has lost its elitist character, becoming a tool open for working with the community.

There are innovative experiences in to using GIS in crime prevention at community level. Today we speak of “public participation GIS”, or PPGIS. It is based on the premise that

“community” must not be a mere “object” to be intervened. The current challenge is to empower society: “working with people” or “working for people” are not the same.

One example allows us to understand how this works. The construction of perceptual maps by GIS workshops is designed to inform of the needs and perceptions of how inhabitants contribute to revitalise their own space. The carrying out of “participative diagnosis” allows a definition of priorities and territorial appropriation.

In those workshops, participants are asked to identify the dangerous areas, the zones where specific crimes such as drug selling and robberies take place or do not, and to jointly analyse their causes and possible solutions.

It is important to say that such perceptual maps do not coincide necessarily with crime maps developed by the police from the registry and official statistics, which are limited because of the undetermined figure of non-reported offences. Compared to other crime maps, such maps show the gap between “police perception” and “society perception”. Therefore, they open a space for dialogue in order to satisfy the inhabitant’s specific needs and demands for security. In this context, this tool fosters the development of strategies on “community actions”, “community-based policing approach” and “partnership for actions oriented to problems”.

The Chilean experience in this field can be summarised as follows:

- a) The more the community knows about crime and safety problems, the more it is willing to work and to co-operate with the police in order to solve such problems. Maps help in policing and in solving problems, by indicating where they do exist and where they do not.
- b) Maps help increase the knowledge of existing problems present in a territory. They allow the identification of hot spots and the destination of resources to areas with more needs and not to the ones with low priority, despite of residents’ pressure.

- c) Crime mapping promotes the establishment of alliances between researchers and public institutions, and it helps these to carry out a better performance.

- d) Maps help to sensitize relevant actors and to promote community's participation, social responsibility and informal control over the police response.

IV. Problems Related to its Use

But, as you can suspect, the installation of GIS and community involvement are not free from difficulties.

It is important to point out that generally the experience in this field comes from countries such as the United States, England, Australia and other countries from Africa and Asia Pacific. The political and administrative structures are very different in some cases. In those countries, the local political culture and the views on governance and social participation follow socio-historical schemes. This has implications and limitations for GIS and crime mapping and generally these depend on cultural profile, education and training by making governance and public policies.

Let me summarize this in few words:

- bureaucracy and institutional cultures
- centralism
- restriction on exchange of information
- lack of a systemic and of integral view of problems
- absence of induction and socialization processes
- misunderstanding of its potentials

In Latin America the “empowerment” of society is a more complex process closely linked to political culture and practices of domination, which do not extinguish with the

familiarisation and the use of this kind of tool. How can the use of GIS contribute to change this?

In few words and in my opinion, the introduction of GIS helps society and democracy at a local level because it facilitates the “democratization of knowledge” and its communicability. GIS is persuasive, because it erodes knowledge hierarchies that dominate the “social representations” and “interpretations” of the “social problems”, like crime and violence.

Following the current trend, we have to consider the publication and availability of maps as an urgent matter, mainly due to increasing information demands from citizens, the police and the scientific community. Without good information it is impossible to do something in a sensible fashion.

But, a popularisation strategy for this tool at local level demands a publication policy because it is necessary to keep in mind some difficulties like:

- a) The use for business purposes (insurance companies or companies offering alarms or surveillance services, privatisation of security).
- b) The publication of maps may harm a high criminality area by influencing the property value and insurance value.
- c) Potential offenders may use maps to identify areas which are not a priority for police surveillance.
- d) The details of incidents may be misused, consequently hindering the privacy right of victims.
- e) Victims may not be willing to collaborate with the investigation of a crime if they fear to be victimised again. If this occurs, the decrease in reporting crimes will complicate an adequate police response to the citizen’s security concerns.

V. Conclusions, Challenges and Suggestions

The introduction and the extensive and intensive use of GIS in police and public agencies, facilitates the information, knowledge and result management in crime prevention. It is easier to create interaction for a co-ordinated and focussed work between local government, communities and the private sector.

From the strategic and policy design point of view, GIS provides important potential in five concrete domains at local level². These are the following:

- a) **To identify problems** (priority areas – focalisation).
- b) **To socialize information** so as to promote preventive behaviours.
- c) **To design strategies** according to characteristics and differentiated problems (protection/risk factors).
- d) **To orientate efficiently and effectively resources** for social and situational prevention.
- e) **To strengthen the community**, the governance and to support public policies.

Recent experiences show the GIS's potential and the capability to persuasively awake and convoke people with a more objective, holistic and focussed look towards territorial problems.

This is a key tool because it will help to consolidate conditions and to provide communication capabilities on relevant insecurity problems for local governments, the community and the police. In other words, prevention demands greater power from society and depends on the existence of participation mechanisms and involvement scenarios. GIS provides this essential virtue.

² Tudela, Patricio *Espacio urbano e implementación de programas de prevención del crimen, la violencia y la inseguridad en el Gran Santiago a través de Sistemas de Información Geográfico – Delictual*. Seminario Ciudades, Violencia y Prevención en América Latina, Ministerio del Interior, DSC, Agosto 2003, 24 págs.
http://www.seguridadciudadana.gob.cl/seminario_violencia/Seminario%20Ciudades_P.%20Tudela.pdf

Challenges and Recommendations:

- a) It is important to recommend and to promote urgent efforts to create favourable conditions for introducing and exploiting this tool at a local level.
- b) It is essential to systemise best practices by using GIS and other relevant experiences at local level.
- c) We need to identify different strategies and tools orienting the participation in information and knowledge management at a local level
- d) We must prevent an “inside office” use and promote the transit to a “public participation GIS”.
- e) There is still one aspect to solve: the responsible publication and access to information for all necessary practitioners, reducing the risk of misuse.