# Mapping Protection Risks for Urban IDPs

Cartographer: Jeremy Harkey, May 2011

## IDPs in Santa Marta:

Santa Marta, Colombia is a principal receiver of Internally Displaced Persons (IDPs). Protection of IDPs by ensuring their physical safety and access to rights is a challenge for the Colombian government, and NGO and international agencies.

A 2007 survey by Tufts/Feinstein Institute and IDMC profiled the IDP population. It consisted of 909 interviews, in 45 of the city's 85 neighborhoods. The survey sought to understand who the IDP population consisted of, where they had come from, and which problems they experience that pose protection risks. It also gathered information about the non-IDP residents living in these same areas.

## Project Description:

This project sought to analyze which protection problems the IDP population experiences, what sort and degree of risk these cause, and how their risks relate in substance and geographic concentration to those of the non-IDP population.

This analysis helps to understand the inter-relation of the IDP population's location of residence, and the risks that IDPs face. It operates under the notion that if policy makers understand these risks by degree of the problem, and by geographic concentration, they will be able to adjust law enforcement, social services, and humanitarian assistance policies accordingly.
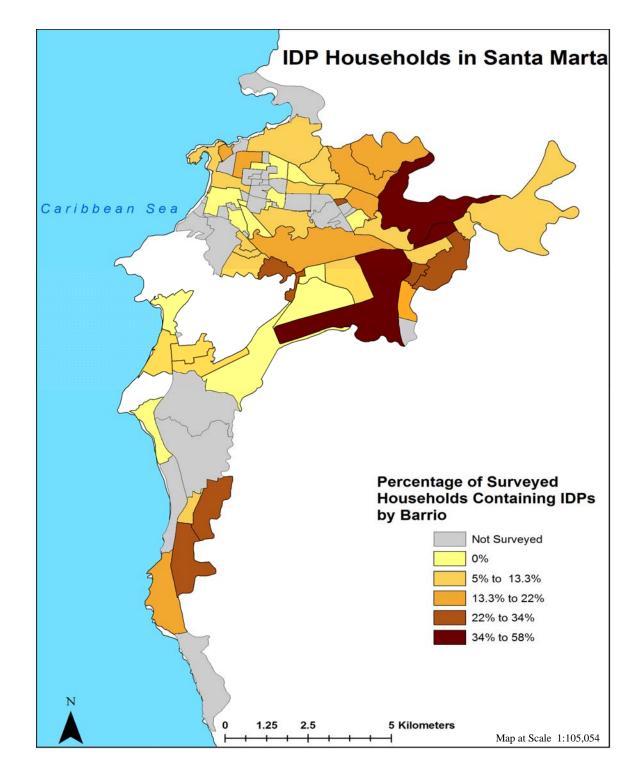
## Methodology:

This analysis shows statistical information from the survey, aggregated to the neighborhood in which the interviewee lives. Based on the average occurrence of specific risk responses per neighborhood, the GIS mapping presents information on risks for IDP population, and for joint IDP and non-IDP populations.

Within each risk category, survey responses were coded to represent the degree of risk that each protection problem signifies. Further, the maps show a calculated "composite" score for vulnerability. Composite scores sum up individual risk scores. When aggregated to neighborhoods, composites reflect the general risk experienced by the population in question. For example:

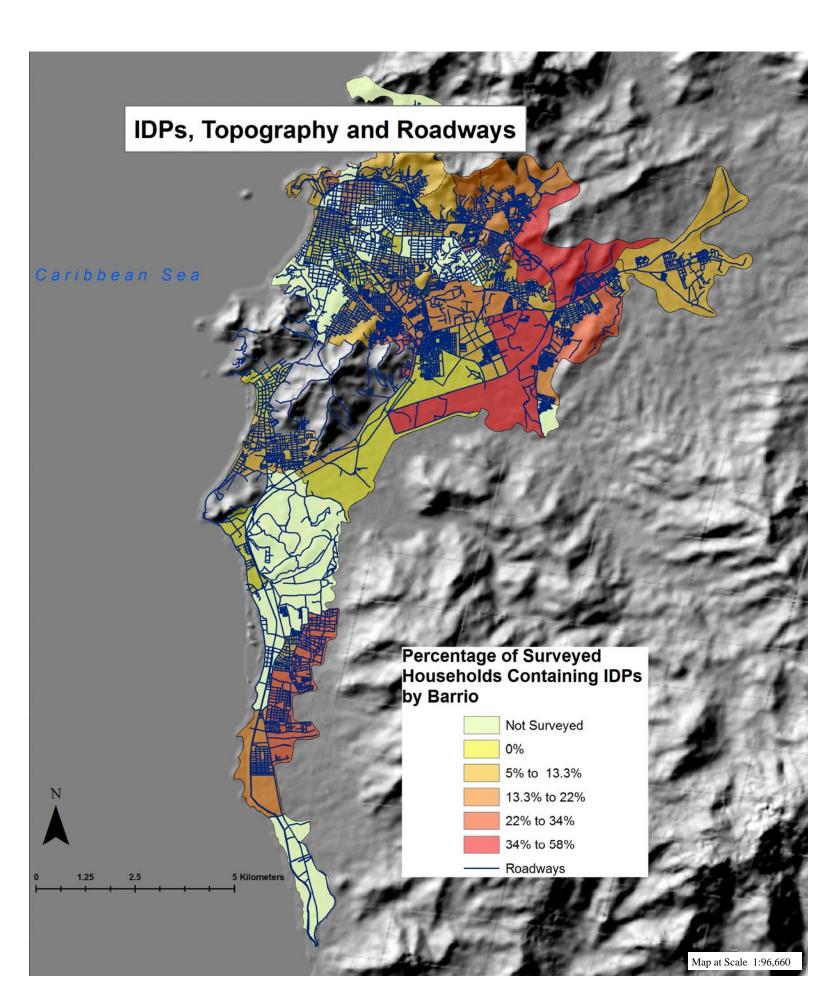| Distance to Police Station | | Housing Material | |
|---|---|---|---|
| Survey Coding | Recoding | Survey Coding | Recoding |
| 1= Within 1Km | 1 | 1= Plastic/Wood Shelter | 6 |
| 2 = Within 2-5Km | 4 | 2 = Shack | 5 |
| 3= Within 3-6Km | 7 | 3= Room | 2 |
| 4= Within 10Km | 8 | 5= House | 1 |

## Where do IDPs live?

This map aggregates IDP population to neighborhoods by quantifying the presence of surveyed IDP households. It allows us to understand where the population concentrates, and where IDPs live relative to the municipal space. The IDP population is concentrated around the periphery of the city.


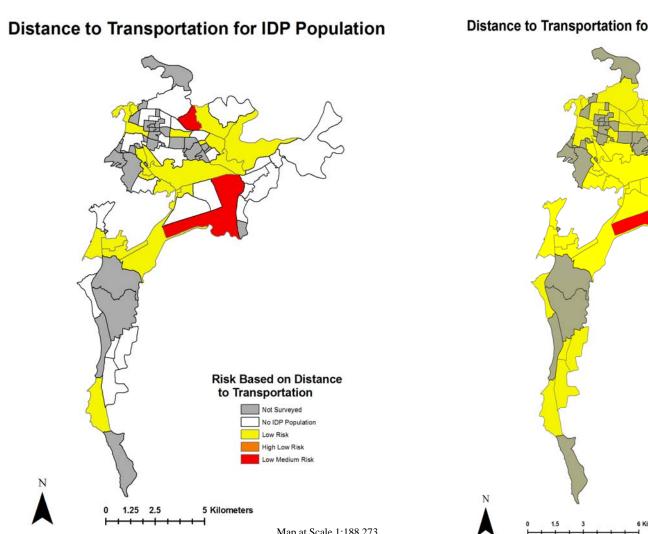IDP Households in Santa Marta

## What is it like where IDPs live?

Notably, the greatest concentrations are in neighborhoods that have few roads. This affects residents' access to the services, work, and other elements more prevalent in other parts of the city; and authorities' ability to access these resident populations. Importantly, some of the neighborhoods with high IDP concentrations have steep inclines, and are built next to/rising up hillsides. This quality has implications for ease of access, security of the housing, and vulnerability to landslides and other damaging natural elements.


IDPs, Topography and Roadways

Distance to Police for IDP Population — Distance to Police for IDP and Non-IDP Population — Distance to Transportation for IDP Population — Distance to Transportation for IDP and Non-IDP Population
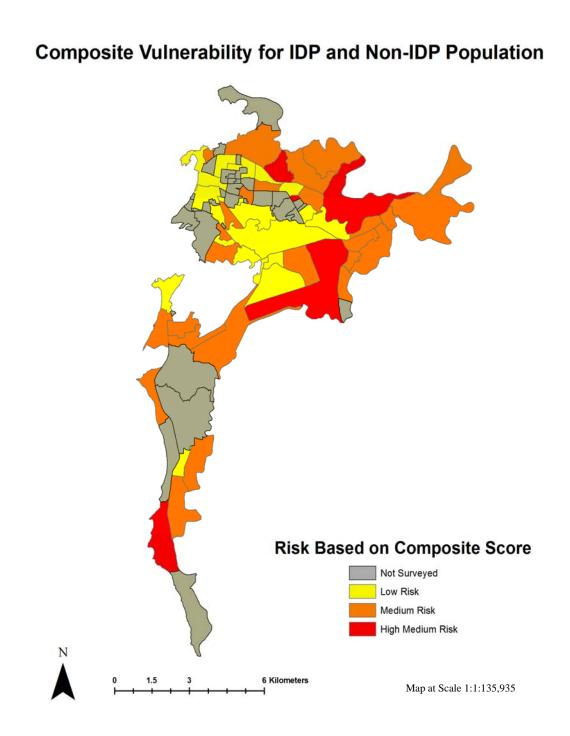
## Aggregating Risks to Neighborhood Level:

It is evident that IDPs experience specific risks to a greater degree in certain neighborhoods, and that these lie closer to the edge of the municipal bounds. When the maps include information on these problems for both IDP and non-IDP interviewees, it becomes evident that these populations share risks. Further, they show a trend in the degree to which adjoining and similarly peripheral neighborhoods experience these problems. It is reasonable to surmise that these risks will influence the extent to which the populations experience other risks; and the scale of composite risk.


Composite Vulnerability for IDP Population — Composite Vulnerability for IDP and Non-IDP Population

## Composite Vulnerability:

This quantification of risk considers eleven factors, including those shown here and others such as "Squats on Land", "Distance to Health Facility", "Experiences Flooding" and "Unsafe". It clarifies, which are the most at risk neighborhoods, and allows us to see how individual risk factors contribute to a broader degree of vulnerability.
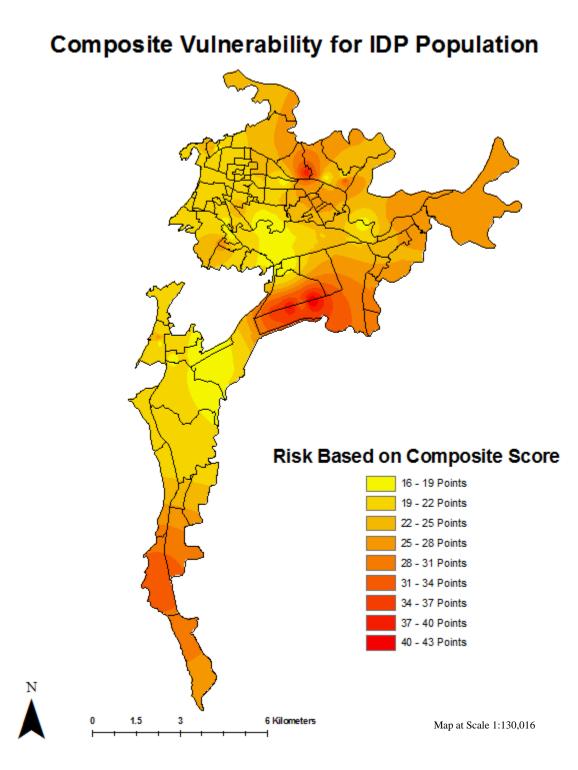
## Inverse Density Weighting:

This GIS tool maps the density values of the composite vulnerability score. It does so by calculating the degree to which one neighborhood's composite may reflect the vulnerability of adjoining areas within a given radius. GIS projects one area's value on its surrounds with a given radius, based on the height of that sampled area's score.


Composite Vulnerability for IDP Population

## Conclusion:

Mapping the Feinstein-IDMC survey data helps us to understand the degree and nature of IDPs' vulnerability. This mapping exercise conveys critical information about the lives of the surveyed neighborhoods' residents. It shows the degree to which IDPs face risk factors, and visualizes certain intricacies of these risk factors.

GIS allows us to see in the maps, and in representations of statistics, some of the reasons for which IDPs and their non-IDP co-residents experience marginalization and extensive protection challenges. Using these maps, policy makers could better understand not only the nature of these problems, but how they can begin to respond to them.