

The specific Colombian problem

# Antipersonnel landmines and improvised explosive devices in the fields of the illicit crops

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# Colombia DIRAN - Coca test field



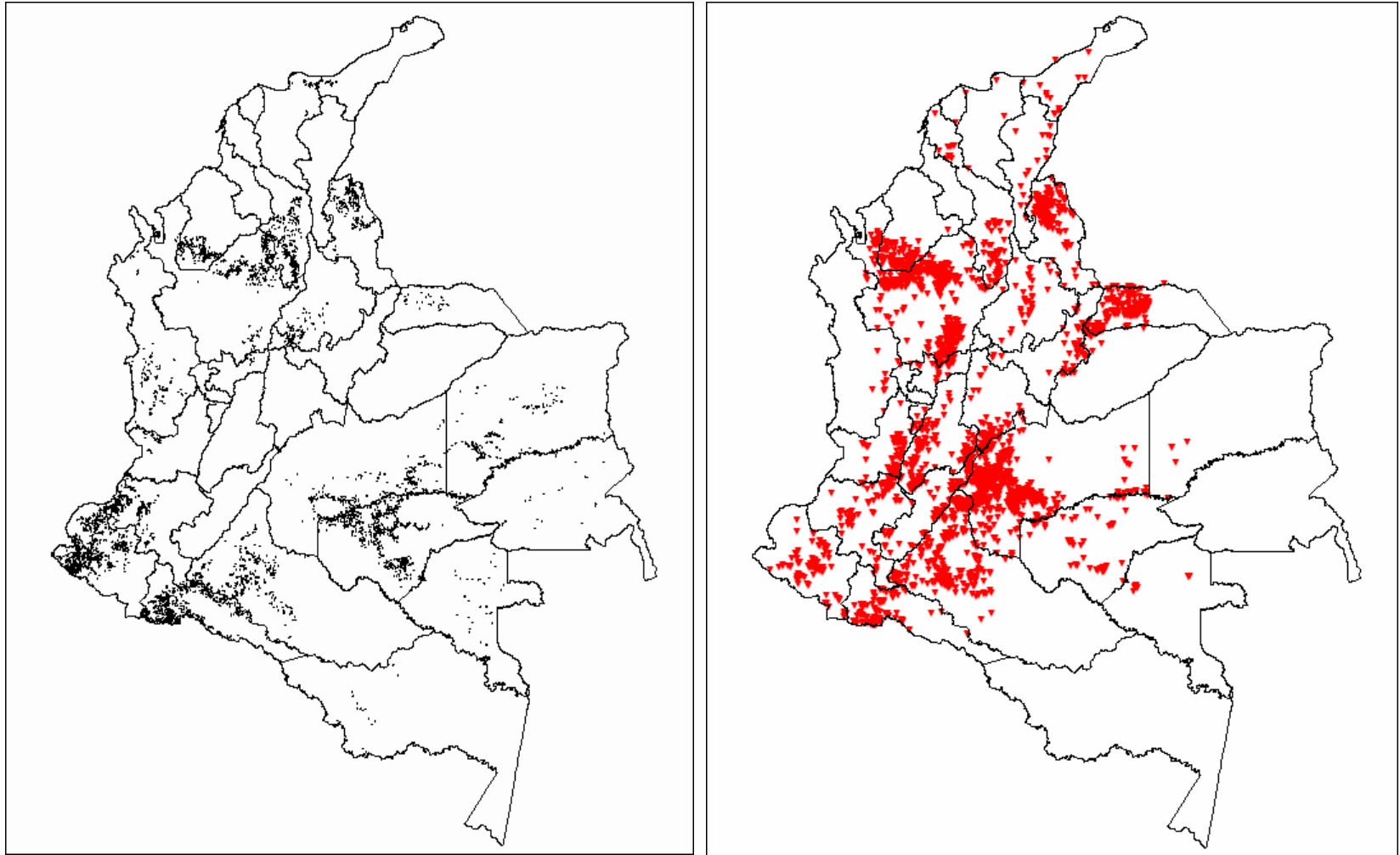
# Antipersonnel landmines

- Colombia is considered one of the countries with the highest numbers of emplaced antipersonnel mines, as well as the largest numbers of landmine victims in the world.
- It is estimated that antipersonnel mines are spread throughout 40 percent of Colombia's national territory, affecting 31 of the 32 departments, and present in one out of every two municipalities.
- The five departments with the highest number of victims were Antioquia (22%), Meta (10%), Caquetá (8%), Bolívar and Norte de Santander (7%) respectively.
- Statistics show that since 2008, average of 2 people per day are victims of antipersonnel mines and improvised explosive devices (IED).

# AP landmines and IEDs in coca fields

- The specific of Colombian mine action is the wide appearance of antipersonnel landmines and IED in the fields of the illicit crops of coca, poppy and marijuana.
- The Colombian Government has focused its efforts in combating drug trafficking in particular on one of the first links in the chain for the illicit crops cultivation.
- Integrated Project Monitoring System SIMCI, supported by the UN agency, has established itself as a source of valuable information on the location and quantification of illicit crops, based on satellite imagery analysis.

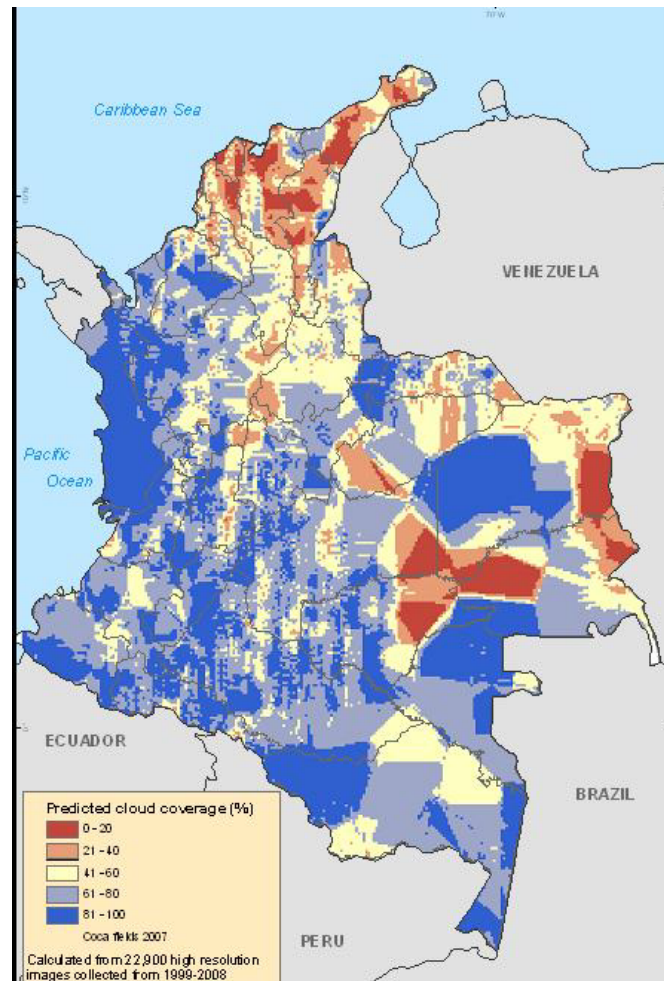
# Coca fields 2009 by SIMCI, AP mines and IEDs



# Monitoring the coca fields

- The development of aerial spray operations and manual eradication in the country has forced narco cultivators to implement strategies to avoid and lessen the impact of eradication operations, following the dispersion of the lots, reduced size of them and crop establishment in areas of difficult access.
- Due to the above it is necessary to search for new high-tech tools that allow the localisation and quantification of the areas where illicit crops are present, taking into account that the information reported by SIMCI is temporary cut at December 31 each year.
- The limitations on the acquisition of information has been evident especially in the planning of the operations manual eradication, in which the security forces providing security for Groups Mobile Eradication activity carried out in coordination and support the High Council for Social Action of the Presidency of the Republic.

# Cloud coverage a main limiting factor in space borne surveys



# Satellite scenes used in 2009 - 2010

# Manual search



# Aerial verification of the space borne surveys



# Conclusion

- ❑ While SIMCI provides only an annual report, there is a need to have source of the updated information at any time of year as fundamental tool for decision-making for illicit crops eradication.
- ❑ Landmines and IEDs are very serious problem in the illicit crops eradication, thus Colombia is searching technology for this combined purpose.

# References

- Landmine monitor, (2010). **Colombia, Mine Action, Contamination and Impact, Mines, Landmine and Cluster Munition Monitor.mht**, Last Updated: 13 October 2010, <http://www.the-monitor.org/>
- UNODC, (2010). **COLOMBIA Coca cultivation survey 2009**, United Nations Office on Drugs and Crime, Government of Colombia, June 2010.
- UNODC, (2008). **Workshop on measurement of cultivation and production of coca leaves**, Bogotá, Colombia, 25-27 November 2008.
- Bajić, M., (2010). **The advanced intelligence decision support system for the assessment of mine suspected areas**, Journal of ERW and Mine Action, James Madison University, Issue 14.3, Fall 2010, Available: 1.03.2011, URL: <http://maic.jmu.edu/journal/14.3/read/bajic/bajic.htm>