

PROCEEDINGS

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Introduction

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GRASPA 2015 is the biennial conference of the Italian Research Group for Environmental Statistics (GRASPA-SIS). GRASPA is active since 1995 and has become a permanent working group of the Italian Statistical Society (SIS) since May 2013. GRASPA-SIS promotes statistical and interdisciplinary research in the field of environmental quality, safety and sustainability including air and water quality, epidemiology, climate, earth science and ecology. GRASPA 2015 is also the 2015 European regional conference of The International Environmetrics Society (TIES), it is sponsored by the Young section of the Italian Statistical Society and is a connected event of the Spatial Statistics 2015 Conference.

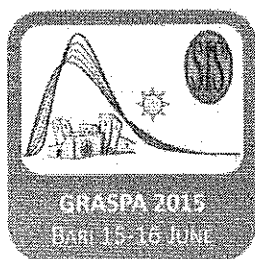
The meeting will have Tata Subba Rao (University of Manchester) and Adrian Bowman (University of Glasgow) as keynote speakers, ten invited tracks on various statistical and environmental topics and more than forty contributed papers. An extensive poster session with nominations for best poster awards will be held. A post-conference one-day short course on introducing flexible regression for environmental data will be given by Adrian Bowman (University of Glasgow).

A Book of Abstracts including 83 abstracts of keynote, invited and contributing authors will be printed, while these Conference Proceedings contain 31 invited and contributed short papers listed alphabetically according to the first author family name. Extended versions of a selection of invited and contributed papers will be considered for publication in special issues of the Journal of Statistical Computation and Simulation (guest editors: A. Pollice, G. Jona Lasinio) and Stochastic Environmental Research and Risk Assessment (guest editors: E. Romano, J. Mateu, M.D. Ruiz-Medina).

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Statistical analysis of zoo-agrarian crime

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Abstract. Environmental crime is a concept not easily defined as it necessarily encloses several, and dissimilar, type of offenses. Legislation too does not help as it lacks of a unique definition of environment. The current definition of "ecomafia", given by Legambiente a few years ago and now in the vocabulary of Italian language Zingarelli, includes a variety of criminal actions even in animals racket and in agriculture: the so-called "zoomafia" and "agromafia". The first flourishes on the control of illegal activities related to animals (illegal slaughter, cheating in horse shows, animal doping, theft thoroughbred, kennel business, fights between animals, illegal imports of puppies, poaching). The second affects, in Italy, a farmer out of three that are victim of threats, pressure and harassment, theft of equipment and agricultural vehicles or the commodities produced, theft of cattle for illegal slaughter and trade of meat, potentially dangerous to the health of consumers. Contrary to a mild and generalized decline in the number of offenses over the previous year, in 2013 both the agricultural sector, which has seen a surge of offenses (9,540: more than doubled), the waste cycle (5,025 crimes: +14.3%) and illegality committed against wildlife (8,504: +6.6%) recorded a growth.

Keywords. Ecomafia; Zoomafia; Agromafia.

1 Ecomafia

Coined by Legambiente few years ago, the term Ecomafia indicates the activities of organized crime, involving environmental crimes. The data of 2013 show 29,274 offenses recorded, and the turnover of the environmental crime, always very high, despite the crisis, has reached almost 15 billion Euros within 321 surveyed clans. The slight decline in eco-criminal activity (in 2012 amounted to almost 16.7 billion) is due to the decline in investment at risk that also reduced earning opportunities for the gangs. Illegal trade in hazardous waste, amounting to 3.1 billion €, remains substantially unchanged, and sales of unauthorized construction is stable at 1.7 billion.

It is true that a cumbersome regulatory system, characterized by continuous emergencies and referrals, has in fact further expanded the range of all those who have experienced the possibility of easy enrichment at the expense of the environment and of the whole community.

2 Zoomafia

Born to control the illegal activities that have as their object the animals, the zoomafia is a crime association stretching from the north to the south of our country, involving the collaboration of the Italian organized crime with the foreign market. The turnover of the gangs specialized in this sector is estimated at 3 billion Euros: a round of huge money involving trade in dogs and cats with fake pedigree or exotic animals, poaching and smuggling of wildlife, illegal betting on street racing horses (one third of the total turnover), dog fights, fish racketeering, illegal slaughter, cattle rustling and adulteration.

In 2013 there were 8,504 offenses, increased by 6.6% compared to 2012. In particular, seizures increased from 418 (in 2012) to 2,620, and the arrests increased from 7 to 67: symptom that the repressive activity in the last year has been particularly effective. Sicily remains firmly in first place for number of offenses detected (with 1,344), followed by Campania (1,075), Puglia (953), Calabria (725) and Lazio (667). The top five provinces for the number of offenses against animals are Naples, Rome, Venice, Palermo and Trapani.

A growth in the number of crimes that is coupled with the cruelty and brutality with which it continues to do business on the skin of animals: clandestine races involving mostly drugged and abused horses, than slaughtered with contaminated meat put on the market; dogs used for fighting in improvised rings, including old vans, or used as carriers for drug shipments. It is estimated that in Italy there are about 100 thousand puppies illegally imported, usually coming from Hungary, Poland and Slovakia. There has been a parallel increase in seizures of illegal kennels, where many puppies are raised in cramped and unsanitary conditions.

The forms of business most profitable are connected to the world of horses and street racing: the Sos Impresa report argues that an illegal ride can produce up to 50 thousand Euros. This phenomenon is intertwined with other crimes such as the illegal slaughter: the world of horses is "polluted" by the interest of organized crime, and every year about 80 thousand horses arrive in Italy for slaughter, traveling in horrible conditions: salmonella, sunburn, stress syndrome are some effects of the long torture, with serious consequences for the quality of the meat and the health of unsuspecting consumers of horsemeat.

We must not forget the criminal behavior in relation to protected and endangered species: the trafficking of exotic animals, especially birds and their eggs, is becoming more and more prosperous. A growing traffic of wolves has been recorded in northern Europe, while Europol reports indicate that revenues of rhinoceros horns in Africa have become part of the budget of international terrorist organizations. Also the number of Italian customs controls showed an increase of illegal imports of species protected by CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention): 5,485 animals seized in 2013 in Italy, where wildlife is threatened at various levels of risk, and monitoring is still limited: 20% of the national parks is subject to poaching, especially against the large mammals that inhabit them, such as deer, wild boar, chamois and roe deer.

In this context, that still lacks of a national legal framework to regulate the conservation and management of the entire fauna, the main threat to wild animals comes from a number of factors such as the apparent lack of political and social interest to monitoring wildlife and its conservation and management against the economic interest of unscrupulous people.

3 Agromafia

No sector of the economy and production seems to be overlooked by organized crime, and agriculture is one of the frontiers in the development of trafficking. The Agromafia is based on both investment

and laundering of money in crops, either by fraud to obtain public funds for the development of the agricultural sector: so impressive is the boom of the crimes in the food industry that from 4,173 crimes registered in 2012 rose to 9,540 with a doubling of complaints and 57 people arrested. Mafia is directly involved in the entire chain: from the field, through transporting, to the markets, and often this continues laundering money through investments in hotels, restaurants and pizzerias. Especially in the regions of southern Italy, there are thousands of producers who are subject to threats, harassment and extortion. The countryside, then, is a world in which, compared to urban areas, it still retains very strong code of silence with respect to this type of domain.

Also in this area it is needed to improve the efforts of the police, strengthening of investigations, on the one hand, favoring the short chain and quality agriculture on the other. There is talk of cattle rustling that today feeds a chain of illegal animals without health checks, trade and use of veterinary medical substances not permitted, often made without compliance with the minimum hygiene rules, trade of meat products of poor quality, potentially dangerous to the health of consumers.

The fourth report on crime in agriculture, prepared by the Italian National Confederation of Farmers (CIA) in collaboration with the Foundation Humus, says that agriculture generates income for the "company Mafias Corporation" for more than 50 billion Euros a year, equivalent to just under a third of the illegal economy in our country (169.4 billion Euros). A bargain widespread throughout the national territory that is meanly speculating on the difficulties caused by the economic crisis: 25 thousand companies forced to close because of organized crime, 150 thousand head of cattle that disappear, 350 thousand farmers victims of racket, lace, extortion and aggression.

Monitoring agricultural lands means managing some prominent productions of our agri-food sector, so even aspire to be the beneficiaries of public funding to support the economy of the southern regions classified Convergence Objective (European Structural Funds). And if some gangs are characterized by historic control of the fruit and vegetable markets, transport and distribution of products, other criminal holdings have specialized in adulteration and in counterfeiting of trademarks and the so-called Italian sounding. According to the tenth dossier "Italy at the table in 2013" by Legambiente and the Movement of the Citizen Defense, in that year 500,000 inspections were carried out and 28,000 tons of products were seized, for an economic value of over half a billion Euros. Nothing unusual for an industry that handles annually about 245 billion Euros between consumption, export, distribution and induced: about 15% of the national GDP. According to estimates by the Ministry of Agriculture and Forestry, counterfeiting produces in Italy more than 4 billion Euros, while in the rest of the world the false "Made in Italy" has a value of about 50 billion Euros. Money accumulated plundering the wealth of our country is based on cheating especially healthy companies, i.e. those who respect the law trying with great difficulty to do their part.

4 Final remarks

All listed problems, which increase over the years, have not only a political or economic issue, in Italy. Our drama is a baffling and general degradation of ethics that is poisoning our Earth. It should therefore be defined a real national plan to combat *ecomafia*, in consultation with the regions and local authorities, to prepare all the tools to control the territory. Unfortunately the penalties for environmental crimes continue to be almost exclusively fines, and jail time for the perpetrators of these crimes remains sometimes a pure utopia. In recent years there has been a further twist: our Parliament, in the name of simplification, decriminalized offenses against animals for so-called tenuous nature of the fact.

In conclusion, we hope that, in compliance with the requirement of legality and safety widespread in all strata of society, some laws waited for years for the protection of animals are implemented. We refer also to the amendment of legislation on companion animals and the rules on the protection from attacks by dogs, which require restoration in a single organic and renewed text.

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