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## **Development of a risk assessment methodological framework for sea-borders**

### **Keywords**

sea borders, risk assessment

### **Abstract**

Sea borders are identified as a major entry point in EU. In order to be adequately prepared to manage illegal immigrant's inflow and mitigate the significant socioeconomic impact. The present paper introduces a comprehensive risk analysis methodological framework for the analysis of the present situation, risk prioritization and mitigation analysis. The proposed approach will be applied to a specific site in a N. Aegean Island, Greece as the country is the access point of over 80% of all immigration flow to the EU.

### **1. Introduction**

Passenger flows at the external borders of the EU have been steadily growing, a trend likely to continue for the foreseeable future, and combined with the increasing mobility of citizens. Despite the vast majority of citizens being granted entry in compliance with existing rules, a significant element of the illegal immigration problem is due to overstayers exceeding their visit time limit.

This constitutes a very challenging objective for facilitating legitimate travel and trade on one hand, while protecting their economies and societies against the threat of organised crime, illegal immigration and terrorism.

In 2009, the [EU] Member States and Schengen Associated Countries reported a total of 106,200 detections of illegal border crossings at the sea and land borders of the EU. This represented a 33% decrease compared to 2008. The decrease is comprised of both a strong decrease reported from the sea borders (-23%), and land borders (-43%). As a corollary to the sharp decreases registered in Italy and Spain, the number of detections of illegal border crossing in Greece rose from 50% of the total EU

detections to 75% of the total. In 2009, the Greek land border sections with Albania and FYROM represented the largest share of the EU total, with 36,600 detections (34% of the EU total), followed by 22,000 detections in the Aegean Sea with (21% of the EU total)" [1].

The present study is focused on developing a generic risk analysis framework focusing on illegal migration at the external borders of the EU and the Schengen Associated Countries. As recommended by the concept of Integrated Border Management, border management should also cover security threats present at the external borders.

### **2. Analysis critical parameters**

The following factors are considered to be important to defining the problem of migration to the EU.

- Increasing labor demand
- Increasing air routes and traveling
- 2008/115/EC (16/12/2008) Directive for the return of illegal immigrants
- VISA issuing release for the East Balkan area

- Protocols/EU-Third Countries Readmission agreements
- Increase of Schengen Agreement member states
- Institutional, legal, civil and economic growth in relevant third countries
- The ease of VISA issuing of Turkey
- Regional Conflicts / Wars
- Climate change effects (catastrophes – drought)
- Food crisis

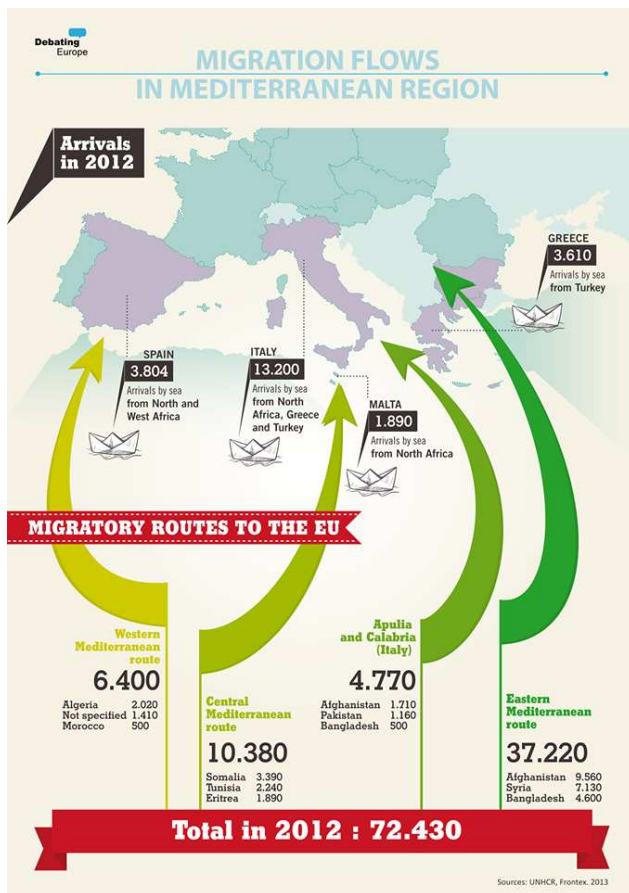


Figure 1. Main migratory flows in the Mediterranean

### 3. The operating environment

Seas and oceans belong to the geostrategic sphere of States, and their sovereignty is there directly addressed. Maritime surveillance has been identified as a building pillar of the 2020 Blue Growth Strategy. However, it is not a self-standing document, but rather the amalgamation of a lengthy and ongoing process which involves:

- EU Internal Security Strategy, that sets the basis for concerted action to address common security challenges, with border management component being the most relevant in the maritime domain.
- EUROSUR Regulation, that came into force in 2013. Important supportive actions are required so that common surveillance tools will be tested

and evaluated, and the European Situational Picture, as well as the Common Pre-Frontier Intelligence Picture, will be further developed.

The study of the EU for the system EUROSUR notes that border surveillance will be carried out by border guards, numbers and methods which will be adapted to existing or foreseen risks and threats. The system will include frequent and sudden changes in the frequency of surveillance, so that there is always the risk of identification for incoming illegal aliens. The used resources should be selected according to the type and nature of the border (land area, inland waterway or sea).

- Integration through a Common Information Sharing Environment (CISE) under the Integrated Maritime Policy for the EU, which will serve as decentralized information exchange network interlinking existing and future maritime surveillance and tracking systems throughout EU and connecting to third parties as well.
- FRONTEX Operations, and in particular the Risk Analysis Unit. A common risk analysis framework (based upon the FRONTEX CIRAM) should be the starting point for every operation, being able to identify short- medium- and long-term trends, and be directly interlinked to maritime surveillance.

Frontex has developed its own risk analysis model, called CIRAM - the common integrated risk analysis model. CIRAM provides Frontex with a foundation for coordinating joint operations at the external borders. Gaining knowledge on cross-border criminality is essential for the establishment of an appropriate reaction. Therefore, CIRAM enables assessment of the relative risks posed by different threats. It was developed in close consultation with member states, and is applicable both at EU and national level.

CIRAM relies on a four-tier access control model that involves gathering information from and disseminating risk analysis to a wide range of partners. Partners include border control authorities both within the Schengen area and at the external borders (e.g. Customs) as well as Member State actors in cooperating neighbouring countries and non-EU states farther afield.

- ✓ The acceptance, updating and support to the “EU Action on Migratory Pressures - A Strategic Response” to combat illegal migration.

### 4. Overview of national status

Greece has the most extensive coastline of Europe exceeding 18000 km in length, where as the area of

responsibility for search and rescue mission (FIR ATHINAL) is far greater of 1million km<sup>2</sup>. The combination of dense maritime traffic, large number of passenger flows, close proximity to neighboring countries and its strategic location in the South Eastern Border of Europe, sums up to a challenging task for fully operational maritime surveillance. By national law, the HCG plans, develops, deploys and operates Systems and IT infrastructure for the effective maritime surveillance in order to fulfill this mission. The basic elements of this infrastructure are:

- The coastal AIS base stations (maritime safety)
- The LRIT System (maritime safety/security)
- The Vessel Traffic Services/ Vessel Traffic Management and Information System (VTS/VTMIS)
- The SafeSeaNet System (maritime safety)
- The CleanSeaNet System (marine pollution control)
- The VMS System (fisheries control)

Border crossings is done usually by illegal immigrants or drug smugglers and arms traffickers, whereas thus far there has not been any officially reported incident for smuggling of illicit material. The migrants and smugglers move mainly on foot or with cars, trucks, motorcycles, bicycles (in provincial, rural or forest roads), and even small boats. Whereas previously, immigrants were crossing mostly at night, often accompanied by their smugglers, illegal movement today has expanded during the day and not only from uncontrolled areas, but close and statutory legal ports of entry. The passage through land borders, is almost exclusively done in the winter. Regarding seasonal trends, illegal crossings peak spring and summer.

## **5. Applied approach for determining user needs**

In order to define the operating environment for the risk assessment framework, the definition of the operational environment must be defined. In the framework for the present work, this has been established through a series of targeted interviews and questionnaires to the end users world.

The meetings were held with end users and discussed the general structure of the questionnaire are asked to fill in the next meeting, to register their claims. The main themes which should be based on the questionnaire are:

Current state of the system and the means to monitor borders , which should be asked questions relating to:

- operational characteristics
- functional characteristics .

- security
- legal,
- social,
- maintenance
- and education .

A series of meetings were held with the national end user (Hellenic Coast Guard, Hellenic Police, etc),to define initial requirements and information presented to the project team. End users pointed out that the general framework of border surveillance benchmark for any approach or energy consistently follow the concept of operations defined in the EUROSUR Directive.

More specifically operational and functional side end users showed the following needs:

1) The range of pre-frontier image is a function of :

- The target group (paragraphs preparation and unlawful entry )
- The defined “pressure” at a specific location which is a function of the (time enforcement measure and responsiveness )
- Morphology of the region (soil type, coverage, land use, terrain heights)

2) The usual desired sensor range is as follows :

- For land borders between 3- 10km
- For maritime borders as needed, depending on the domain of application for coastal surveillance

3) The usual desired coverage of the sensors is as follows :

- In maritime borders without gaps all along the intended area to be considered
- At land borders only on the key passages, where the (thermal) cameras will have perimeter coverage (360°), while the radar targeted segments.

4) The architecture of a system of border surveillance is desirable to follow the pyramid of the three levels of government (local, regional, central / national), according to the EUROSUR principles.

5) Furthermore, such a system is desirable to detect and monitor the evolution of an incident providing the indexed geographic position. In doing so, gives the position of the forces that exist in the field or involved in the incident .

6 ) It was also stressed that it is legitimate for such a system to store data in a database for further analysis or to provide direct statistical information is based on these to be developed specific action plans and to take operational decisions .

7) Finally, end users reported that a border surveillance system is desirable to provide the interfacing of various involved authorities (Police and Coast Guard ) on their own responsibility .

## 6. Methodological approach

The suggested approach is based on the development of a methodological framework for risk assessing which helps address the problem of human trafficking by extending the conventional method of assessing risk (risk = likelihood x impact), through the exhaustive study of various aspects of the problem such as:

- A. Combination of various parameters (e.g. π.χ. vessels, land forces, communications including satellites, legal issues)
- B. Resource visualisation framework (e.g. vessel type)
- C. Business Risks (disembarkation - boarding areas, pass-through time, organised networks)
- D. Resource management (both material and human) using operational tools
- E. Historical data by national and international organisations
- F. Economic impact on a local and national level
- G. Social impact

implement it.

- To the creation of efficiency indices as evaluation measures. The evaluation will be completed through comparison of the suggested solution with other approaches of the literature as well as expert opinions (e.g. FRONTEX personnel).
- To the application of scenarios for an area of the Greek Islands. Results will be illustrated and scrutinised for a focus area of the Aegean.

## References

- [1] European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union.
- [2] FRONTEX (2011). *Annual Risk Analysis ISO/IEC 27001:2005*.
- [3] Hellenic Coast Guard (2011), Statistical Data.

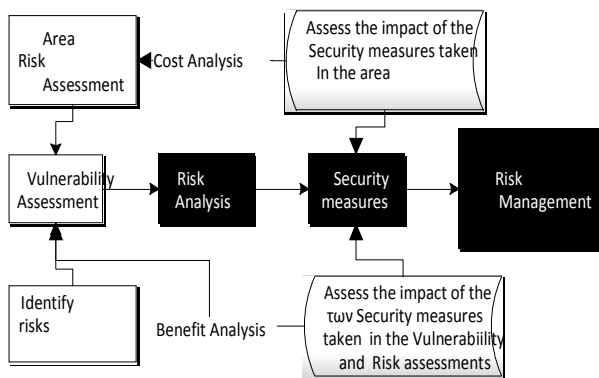


Figure 2. Proposed Risk analysis framework

The proposed methodology aims at the thorough application of a series of tools used in managing risks (e.g. decision trees, root cause analysis, Markov chains) in order to illustrate their advantages and their weaknesses in this particular application and suggest a final solution which fully incorporates the methodological framework of risk assessment in human trafficking.

## 7. Evaluation

In order to fully and comprehensively evaluate the methodology developed for risk assessing the human trafficking problem, a significant section of dissertation will be devoted to the evaluation of the proposed solution. More specifically:

- To the development of evaluation scenarios, which will accurately present the existing situation, as well as the data required to fully