

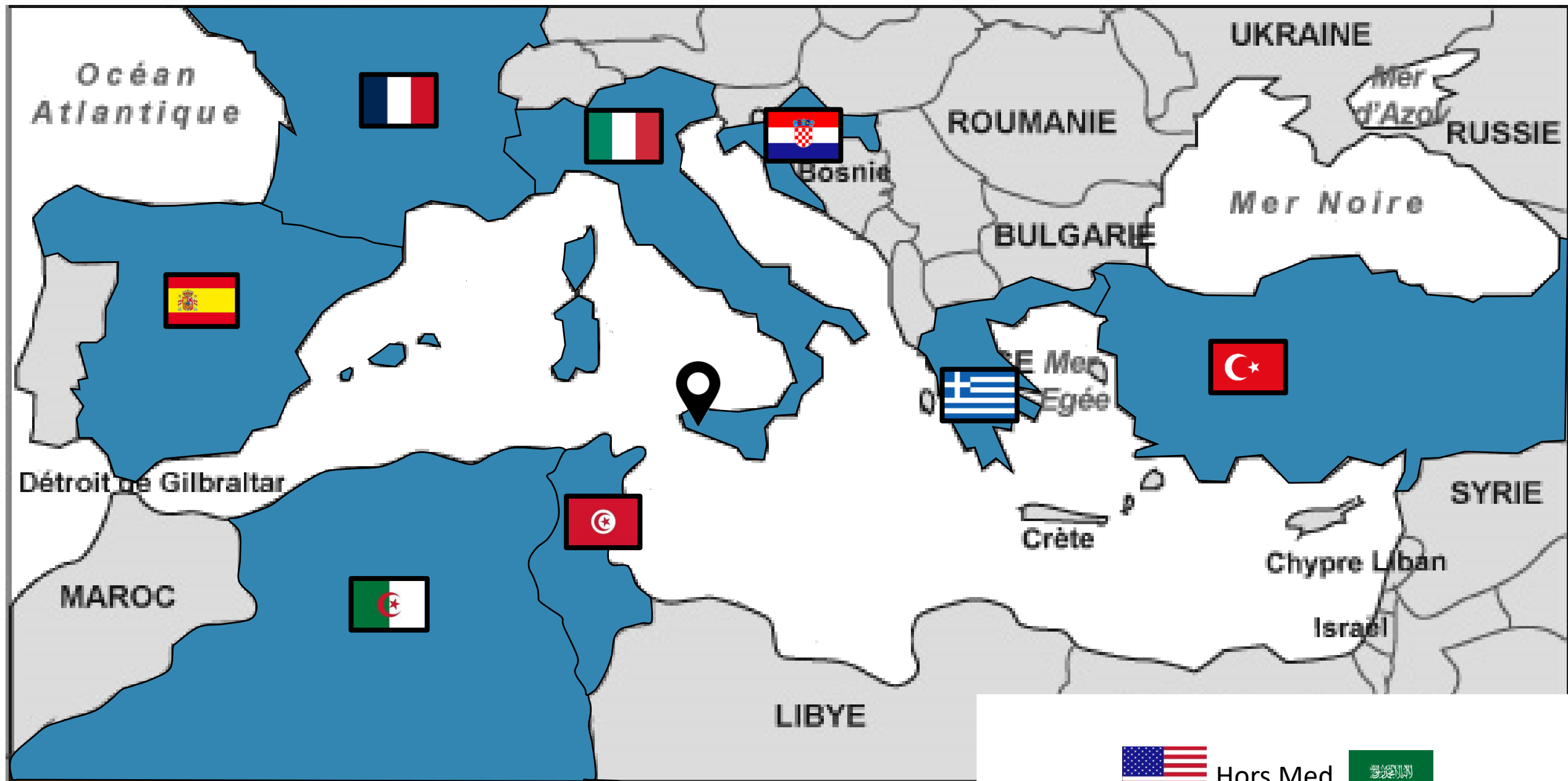


BLUE CRAB MEDITERRANEAN WORKSHOP

• 12-14 DECEMBER 2022 | PALERMO (ITALY) •

**Study, mitigation, and adaptation to tackle
the blue crab species invasion in the Mediterranean Sea**







Discussion 1 |

What effective fishing gear is used in your country to specifically catch blue crab?

France (Corsica) we should make a difference between artisanal fishing gears and big ones (trawlers). For example in Corsica there are only artisanal fisheries.

GR: the main gear used is fyke nets. However, some quantities are caught with traps (creels) and with tangle and gill nets

Spain: C. sapidus is specifically caught using traps (as target sp). It is also accidentally caught by traditional fishing techniques (similar to traps/creels) and in shallow habitats)

Turkey: = trammel net and gillnets in the coastal area, scoop nets, pots and fyke nets in the barrier traps in several lagoons in Turkey

KSA: trawling nets and double gill nets

Italy Lampedusa: - The blue crab is not a target species, so there isn't a specific fishing gear. The organisms have been found especially in the harbour, so they aren't eaten.

Corsica (France), are expectations different depending on regions/local scales within countries?

Italy: = in Lesina Lagoon artisanal fishermen deploy fyke-nets and old gill-nets! eventually, since arpoons are deployed for eels, they use also them

Croatia: - Blue crab is caught by traps, fyke nets, prong and as accidental catch of different types of fishing nets

Italy (Sicily) trammel nets and crab pots, rarely through trawling. No specific gears are still used at least in Northern Sicily

Tunisia (specific Traps, illegal trawler called locally "Kiss" and also fyke nets)

Algeria/ The bleu crab is caught accidentally in fishermen's nets

France: utilisation of adapted eel nets to allow blue crabs bycatches and to be used for the scientific monitoring of the species. These nets are mainly used at the Canet lagoon.

US: What are implications of different fishing gear (bycatch, habitat damage) options? Can something be learned from mistakes made in other countries?

Italy (Veneto region!) moreover, old and broken gill-nets are sometimes thrown in the water (wishing) to catch them!



Discussion 2 |

What are the expectations in terms of management in your country?

Italy- Understanding of the impact of blue crabs on native species and their interactions with other alien species; monitoring and control of population.

US: Agree- need to know what trade-offs are in terms of what will likely be lost if fishery is developed for NIS. A big question here is can they be contained to specific areas at all?

Italy before increase the understanding about the effects of these NIS on biodiversity loss. With robust sci. information propose habitat conservation measures

GR: Control the population. It is a very generic goal, since there are only local data available

Croatia - at the moment population status and possibility of exploitation are investigated at a single hot spot area (Neretva river mouth)

Spain (Cataluña): control of the population at levels that allow local biodiversity to recover and at the same time maintain sustainable fishery

TN- implementation of law to respond to fishermen expectations (specific fishing period & minimum size of catch) . The stock assessment is also needed

France: to understand interaction between P. segnis and C. sapidus and this blue crabs interaction with the native species (Turkey)



Discussion 3 |

In what state of mind are fishermen in the use of this new resource in your country?

Algeria /crabs are not appreciated in Algeria. there are small fisherman who consumes the blue crab, but it is never found in the markets

Spain: due to the decrease of local biodiversity, fishermen changed (adapt) their target fishing sp. to blue crab, even if the incomes are low the demand is increasing

US: Only perspective I can offer is how impressed I am with efforts underway to understand LEK and perceptions among fishers. Engaging with fishers in all countries early is key

Croatia - fishers are not motivated because there is no developed market for blue crab due to lack of demand for blue crab

Italy =in Lesina Lagoon (Apulia-Ita) fishermen consider it a nuisance, given its low market price and lack of processing companies around. However, they are promote it in resta

France: with subvention for net fishermen agree to eradicate blue crab and return on traditional eel fishing

ITA =in Veneto region they'd like to exploit it, expecting to have a positive feedback from the consumers, to promote it, many say they're tastier than lobster while selling them

US: From global view this is an ideal system to compare/contrast priorities and perceptions of NIS among fishers from different countries -> has global implications

GR: Nowadays, some quantities are exported. The wholesale price has dropped, from 8 euros/kg to 5-6 euros/kg... Also, blue crabs are consumed locally in GR

Italy Lampedusa: There aren't a lot of occurrences but the fishermen are curious about using this new species (P. segnis)

Turkey: some of fishermen sale the blue crabs to the restaurants. Also there is export the blue crabs to the other countries.

TN: The perception differs with regions. This new resource varies from opportunity to pest -



Discussion 4 |

In your opinion, what are the important points to address in the future on the study of socio-economic impacts of blue crabs in your country?

Croatia - feasibility of exploitation (in terms of supply and customer demand), impact on native species and interaction with other fisheries

Algeria: we need studies on the biology and socio of the blue crab its dispersal potential.

USA: to consider cultural differences within a country and figuring out how best to cater to those groups of people while cooperating w/ the efforts of other nations

Turkey: We need get data for a long time for different regions. We need to understand their habitat preference, diet, prey-predator relation, breeding mitigation, biology

GR: we need to understand the status of the invasive ecology better. We need further studies on the species' reproduction ecology and the effects of marine pollution and/or alien

Corsica: work on collaborative databases -> face the lack of data in the Mediterranean -> know the crab dynamics -> propose indicators -> managers

France: We need to address socio-economic impacts and ecological impacts together. These two dimensions are still very disconnected in the management plan

Tunisia: we need to explore the interaction between the 2 blue crabs, native biodiversity and also other alien invasive species

Experimentation on thermotolerance and variation of salinity are strongly needed to strengthen our knowledge in term of invasiveness behaviour

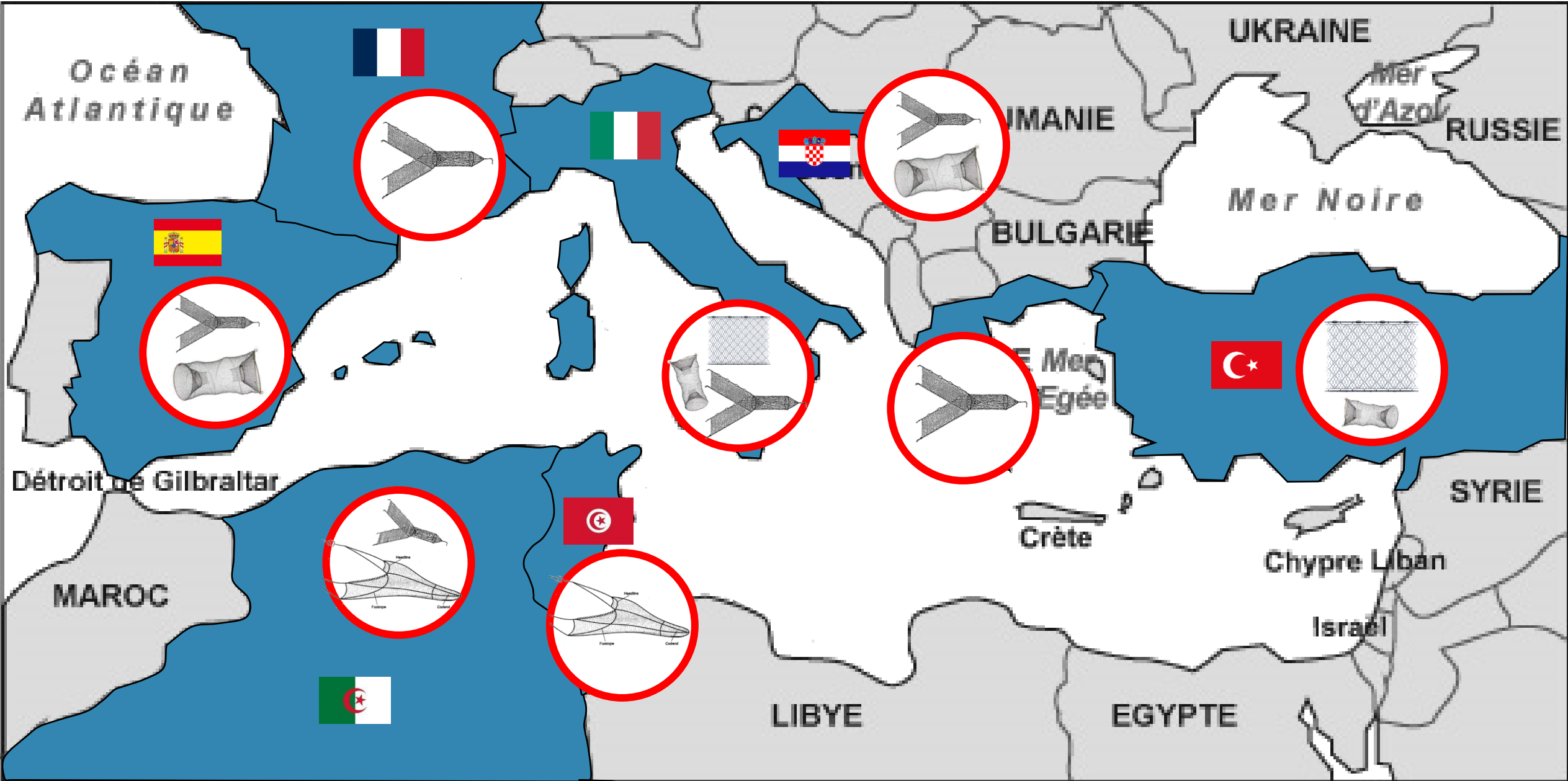
Spain: it would be necessary to monitoring and adapt over time a sustainable exploration plan for the species, and hopefully recovery local target species.

Italy Lampedusa - To assess the distribution and abundance in order to evaluate the impact on local biodiversity.

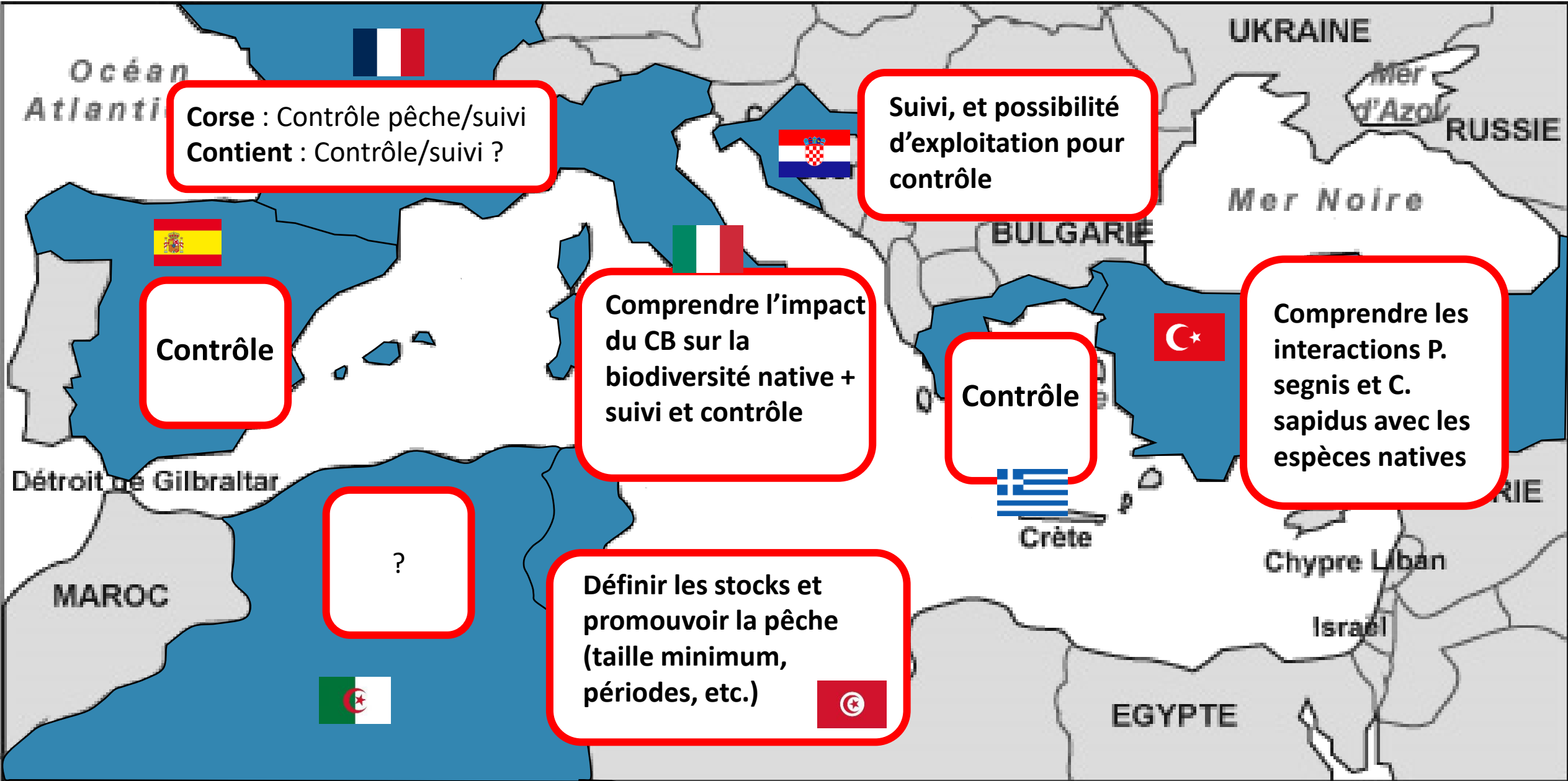
US: Much can be learned here about people (in general's) perception of potential new resource/threat, and how that is driven perhaps by cultural differences.

Italy: the main question first is about the main impact on local biodiversity and repercussions in terms of socio-economic impact due to local biodiversity loss

Discussion 1 | Quel matériel de pêche efficace dans votre pays pour capturer spécifiquement du crabe bleu ?



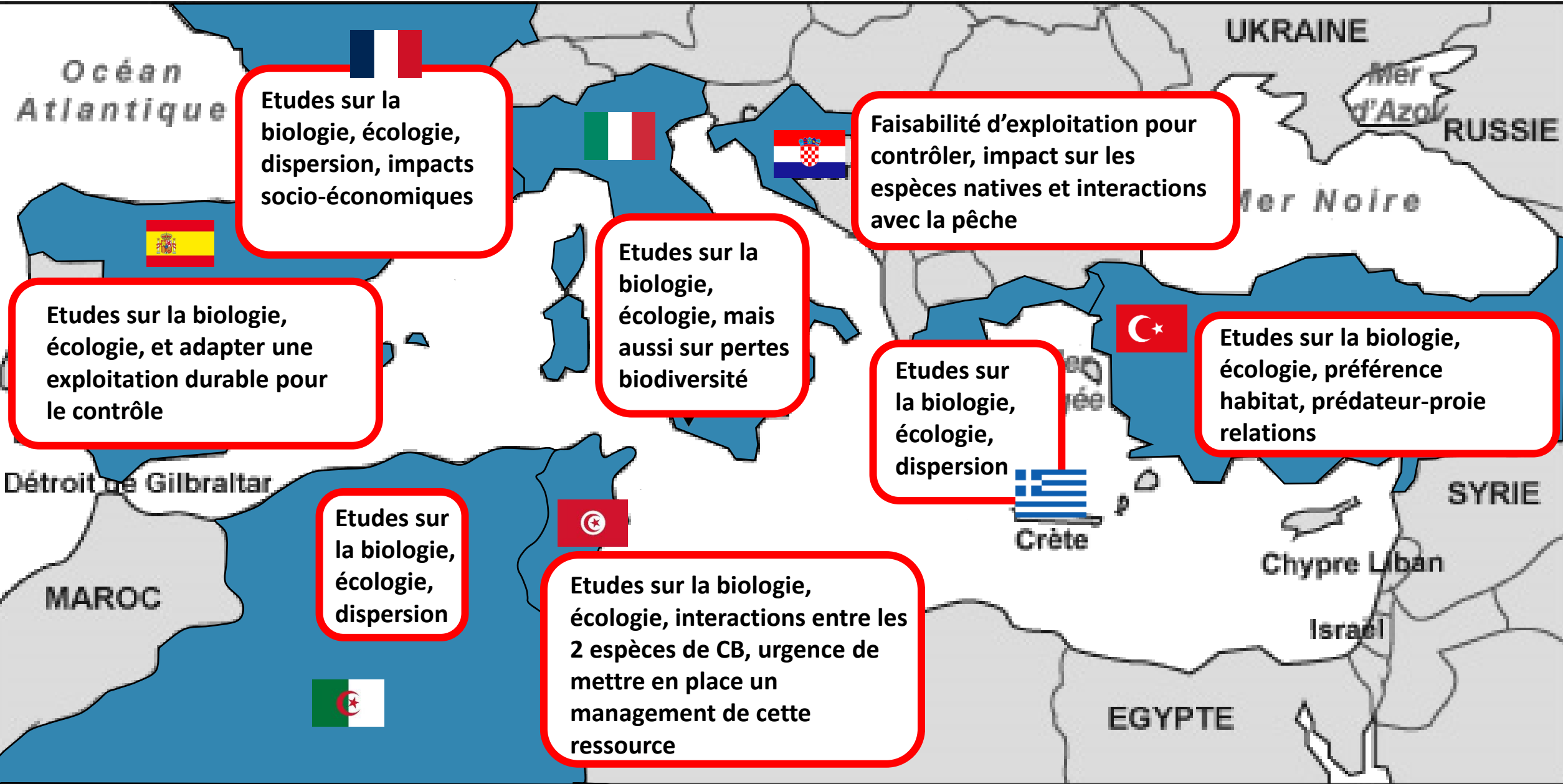
Discussion 2 | Quelles sont les attentes de gestion du crabe bleu dans votre pays ?



Discussion 3 | Quelles sont les attentes des pêcheurs vis-à-vis du crabe bleu dans votre pays ?



Discussion 4 | Quelles sont les points importants à explorer sur les impacts socio-économiques du crabe bleu ?



Le bilan |

- Il apparait clairement une **différence d'approches et de points de vue Nord-Sud Méditerranéen**.
- Les pays **Européens** veulent **plus de données, de suivi et de compréhension de l'espèce** pour mettre en œuvre des mesures de **contrôle**. Mais compte tenu du **contexte et des adaptations locales de l'espèce** il convient de mener des études à petites et moyennes échelles.
- **La Tunisie**, ont mis en place une **industrie sur l'exploitation du crabe bleu**, au départ pour contrer l'invasion, mais c'est **devenu une nouvelle ressource économiquement fructueuse** (14 000 tonnes / an ; millions de dinars / an).
Le gouvernement tunisienne interdit d'ailleurs la pêche de femelles ovigères par exemple.
Mais localement le CB est perçu comme une vraie menace pour la pêche et la biodiversité (île de Kerkennah par exemple).



Le bilan |

- Le **contrôle** apparaît comme étant une des mesures les plus favorables en exploitant la ressource. En revanche il semble qu'il n'y ait **pas de demande de consommateurs** vis-à-vis de cette ressource. D'ailleurs le terme de '**valorisation**' ne semble pas être approprié mais préférer plutôt le terme d' '**utilisation de la ressource comme mesure de contrôle**.'
- Pour finir, il semble qu'il y ait encore besoin de **mettre en œuvre des suivi de populations à diverses échelles, comprendre la biologie/écologie de l'espèce**, pour mettre en œuvre un **contrôle efficace** comme cela semble avoir été le cas en Espagne dans le delta de l'Elbre.

- **Quel exemple de gestion prendre pour exemple ?**



Certainement celui de l'Espagne puisque suite à un suivi de 6 ans dans le delta de l'Elbre et des mesures de **contrôles ciblées** (périodes de repro, femelles ovigères) **les populations de CB ont diminué + blocage des prix de vente**.



En Italie, lagune de Lesina, des pêches sont organisées dans les graux pour prélever les femelles avant qu'elles aillent en mer. En Sicile, il semble que le prélèvement intensif des mâles matures semble être une des mesures les plus adéquates.

Le bilan |

- Mais **utiliser la ressource n'est pas sans précédent** = comme indiqué par Franck Courchamp (Univ. Paris-Saclay) il y a une réelle nécessité de **quantifier les impacts économiques liés à l'invasion du crabe bleu** et déterminer aussi **les coûts-bénéfices liés aux crabes bleus**. Est-ce que les pertes économiques (absence de poissons d'intérêt, matériel dégradé, essence, etc.) et les bénéfices (prix de vente du crabe, consommation, demande, etc.) se compensent ?
- Comme cela a été quantifié pour le crabe royal du Kamtchatka (*Paralithodes camtschaticus*) invasif dans les mers du Nord Européennes (pêché à la nasse, chalut), son exploitation a permis de contre balancer les pertes économiques liées à son invasion.
- **Quid du crabe bleu qui est très agressif et qui a la capacité d'abimer fortement les filets de pêches....**





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Plus d'info :

<http://especies-exotiques-envahissantes.fr/blue-crab-mediterranean-workshop/>

