Stakeholders' perception of *Xylella fastidiosa* disease: Preliminary results in Puglia (Italy) and Crete (Greece)

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XF ACTORS
Euphresco

Rationale

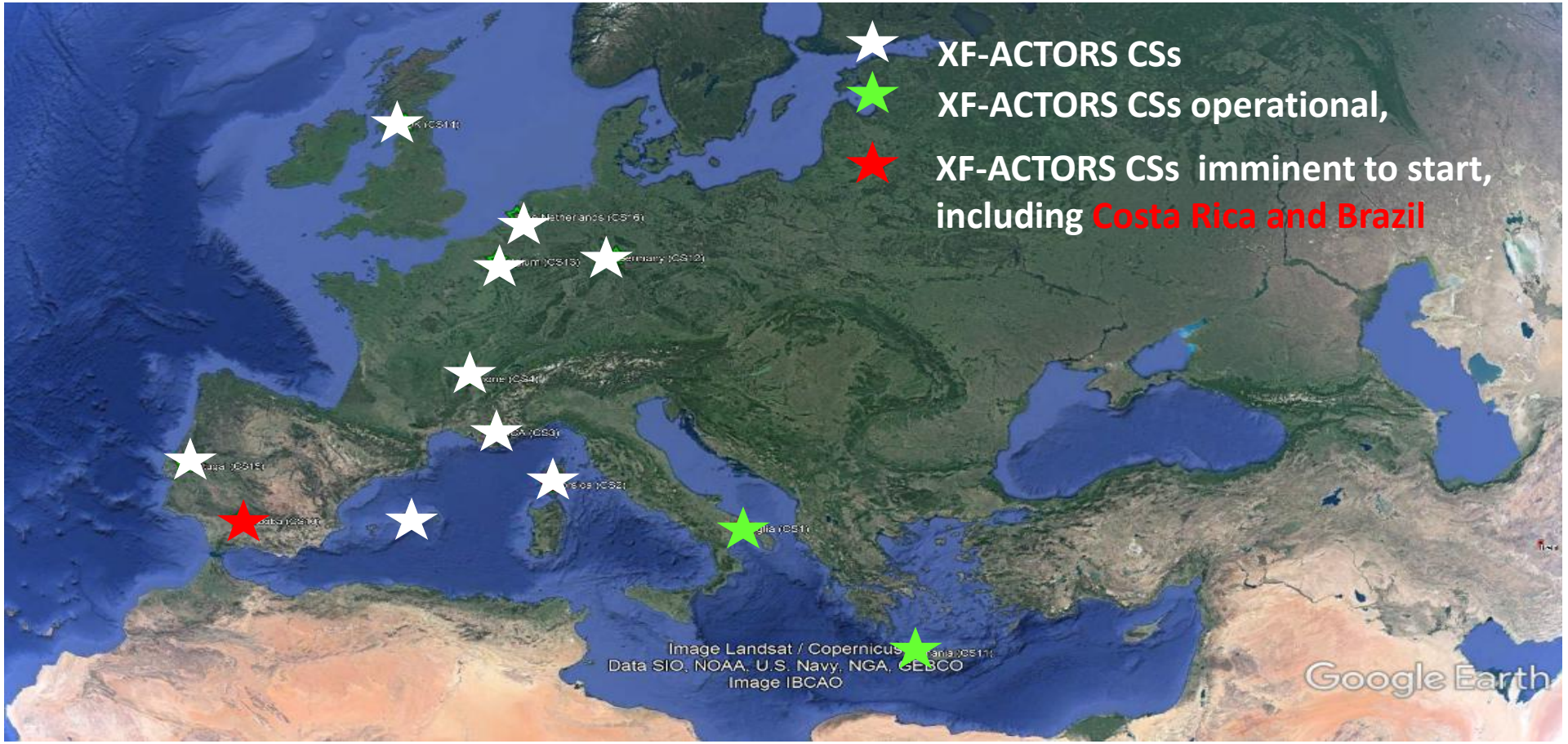
- Several cross-cutting factors affect success of containment strategy of *Xylella fastidiosa* disease:
  - Stakeholders' knowledge
  - Stakeholders' perception of risk disease and related social and economic impacts
  - Effective governance of the information and decision making process

- In spite we know about stakeholders' role, knowledge and understanding of their views and standpoints is still limited

Main objectives of analysis

- Part of the work foreseen in case studies in XF-ACTORS (socio-economic and environmental impact and risk assessment)
- Collect the **point of view and perception of people** about the Xf disease and the containment plans / measures.
- Identify **possible gaps in communication**, understand possible weak points in the communication strategy that could have hampered the application of containment measures.
- Understand the **network of relationships** existing among stakeholders in the territory.
- Collect suggestions from local people that can help **improving the management of information** related to the disease.

XF-ACTORS Case studies in Europe and outside



Case study structure: working in pilot areas

INFECTED

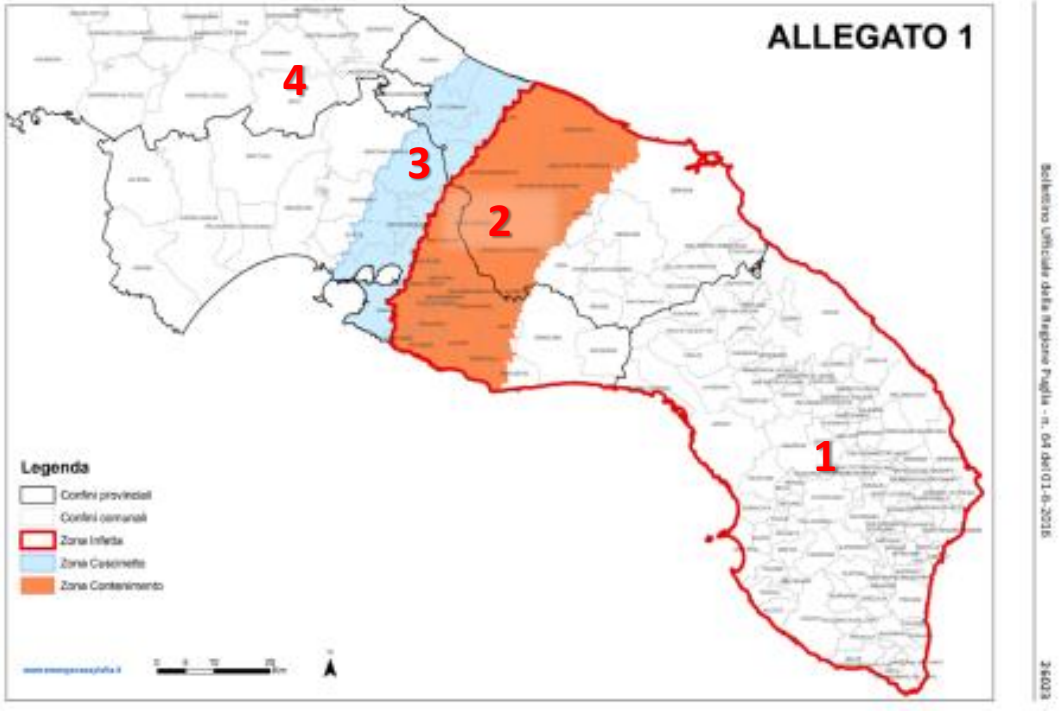
- Assessment of the perception of the level of risk to which people and territories are exposed
- Description and estimation of impacts of applied measures or interventions or of no interventions

NOT INFECTED

- To collect information about disease and assess the perception of risk for territories and economies.

Pilot areas in Puglia

Case study: Italy – Puglia

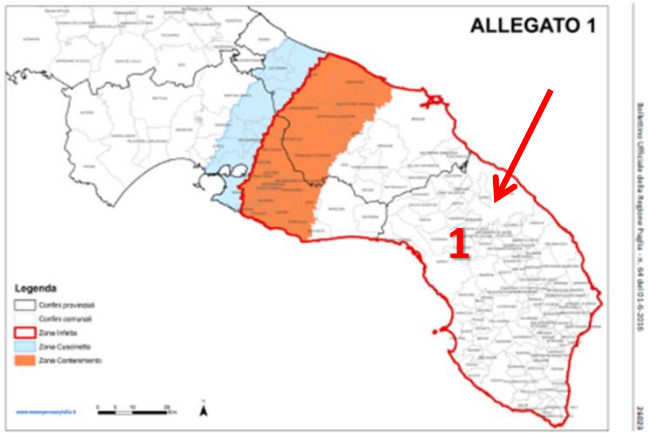


1. Infected area
2. Containment area
3. Buffer area
4. Free area

Containment plan of Apulia Region
(Decision (UE) 2016/764)

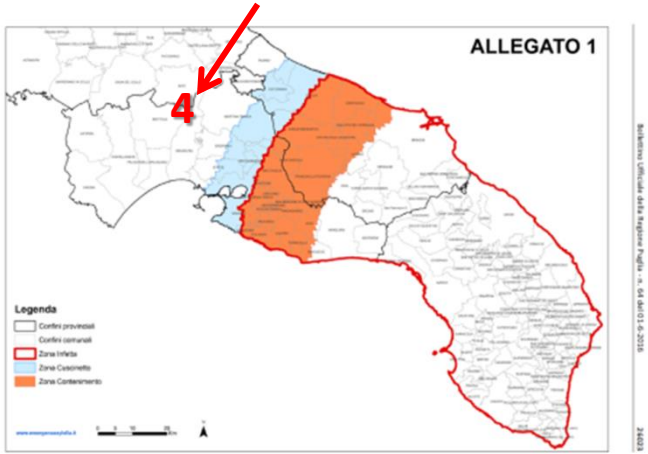
Case study Italy – Puglia: The PILOT AREAS

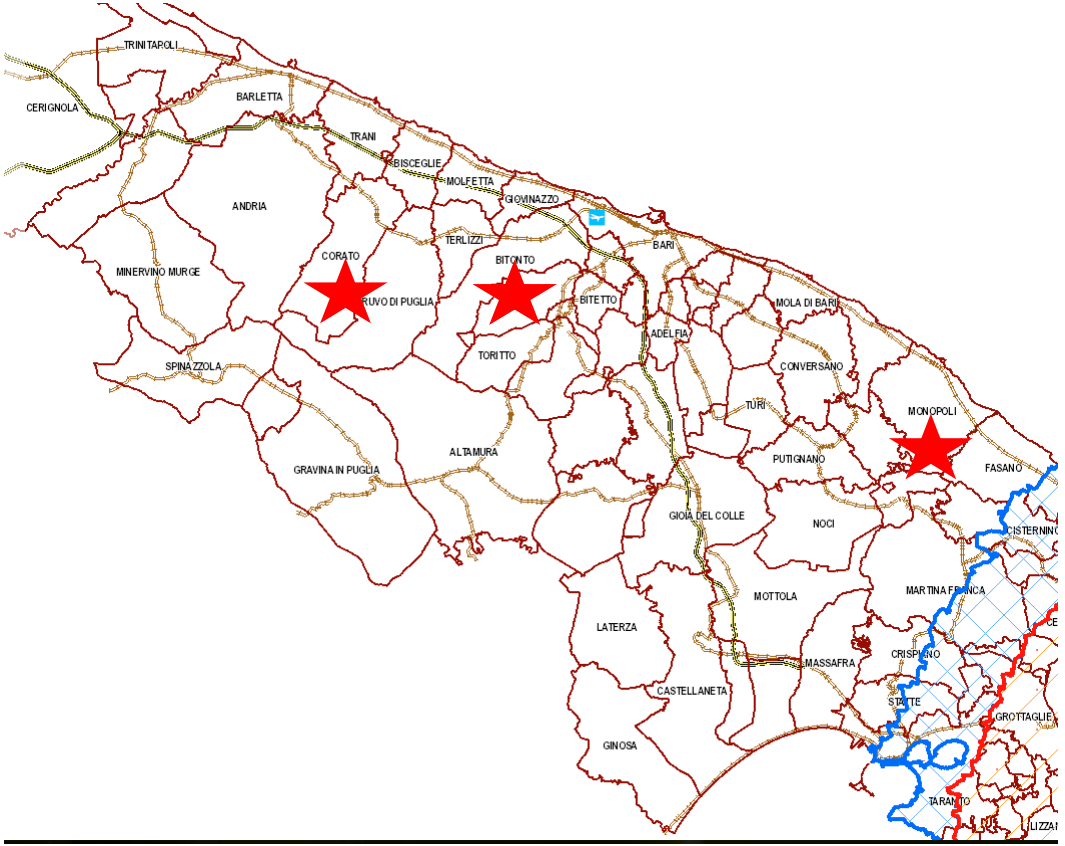
Puglia Infected (I) area:
3 Municipalities:
Gallipoli
Lequile
Trepuzzi



Case study Italy – Puglia: The PILOT AREAS

Puglia not-infected (NI) area:
3 Municipalities:
Monopoli
Bitonto/Andria
Corato/Ruvo





Case study Greece – Crete: The PILOT AREAS

Crete not-infected (NI) area:
3 Municipalities:
Kissamos
Platanias
Kantano-Sellino

Stakeholders identification

- Identifying at least one of them that could be the first to answer to questionnaire.
- After delivering the questionnaire to the first stakeholder, the interviewer asks to identify two more stakeholders to be interviewed.

This kind of identification allows:

- To design **the network of relationships** existing among people.
- To record knowledge about the networks could help to improve the communication strategies at local level.

Survey's sample description

		Italy Puglia		Greece Chania
		Infected area (I)	non infected area (NI)	non infected area (NI)
	total no. surveys	**30**	**30**	**30**
Age	< 40 yrs	3	7	5
	41 < yrs< 65	22	17	23
	> 65 yrs	5	6	2
Education	primary school	1	2	0
	preparatory school	2	8	0
	secondary school	17	16	20
	University Degree	10	4	8
	Msc - PhD	0	1	2
Prevailing activity (stake)	Advisors	2	1	0
	Employee/worker	2	0	2
	Exporter	0	0	1
	Farmer	24	27	12
	Local government authorities	1	0	7
	Processor	1	2	1
	Representative of collective organization	0	0	6
	Supplier	0	0	1
Average Farm dimension (if applicable)	≥ 5 ha	8	3	11
	5 < ha < 20	8	14	13
	> 20 ha	11	11	4
farm surface covered by "sensitive" crops (%) (if applicable)		84,2	77,4	81,3

Questionnaire: main elements

C - Knowledge : infectiveness, symptoms, transmission mode or preventive/control measures.

D - Perceptions of

D1- threat of the disease: level of risk.

D2- susceptibility to the disease: a) the level of exposure to hazard; b) the level of susceptibility to the disease.

E - Impacts from disease : real or possible impacts from the disease on yield or income

F-Involvement in pest management relationships: network of relationships and of processes in which the respondent is involved.

G - Pest management practices (containment measures for Xf): report criticalities and critics to containment measures

H – Information: sources of information on disease and quality of information received.

I - Farm management and production strategies: adopted risk-coping strategies.

L - Governance of risk management system for plant disease: to describe the impacts of rules, norms and compulsory actions on the strategies of the actors.

Grouping of questions

domain	dimensions	index	Questions
RISK	KNOWLEDGE	Disease Knowledge Index (DKI)	Q17, Q18, Q19, Q20, Q21, Q22
	PERCEPTION	Disease Perception Index (DPI)	Q23, Q24, Q25, Q26, Q27, Q28, Q29
	PRACTICES	Farm Practices Index (FPI)	Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q53, Q54
GOVERNANCE	INVOLVEMENT	(INV)	Q30, Q32, Q56
	EFFECTIVENESS	(EFF)	Q33, Q34, Q59
	RESPONSIBILITY	(RES)	Q55, Q57, Q60, Q62

Glossary

Risk domain dimensions

- **Knowledge (DKI)** – level of knowledge about Xf disease in relation to pathogen, spreading (vector), simpthoms and hosts plants
- **Perception (DPI)** – risk perception and risk vulnerability to Xf and impacts
- **Practices (FPI)** – good appreciation, acceptance of prevention / containement / mitigation actions

Governance domain dimensions

- **Involvement (INV)** – involvement of respondant in different activities (vigilance, information, extension, response, post-crisis actions, …)
- **Effectiveness (EFF)** – evaluation by respondants' of effectiveness in SHs involvement as well as their trust in Public Authorities in relation to control/manage the disease.
- **Responsibility (RES)** –knowlege of the different level of responsibilities (and corresponding authorities) in the disease management.

Scoring

Answers to each question were compared with **a set of rules (right answers)** and given a score. Matching with rules were rated **+1** point by question, answers with no matching with rules were rated **-1**, and lack of answer **0**.

Scores were summed up and normalized to scale between 0 (e.g. lack of disease knowledge) and 1 (e.g. perfect knowledge of disease).

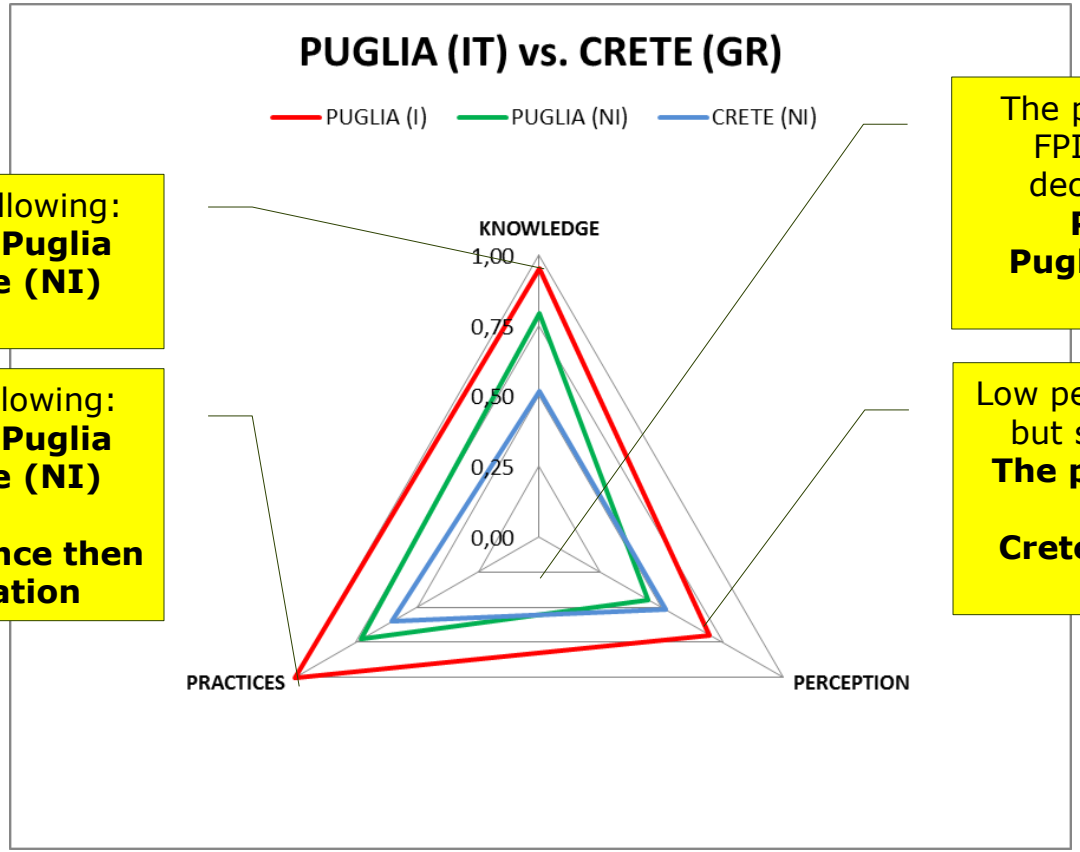
Average score for each pilot area and for each index were calculated and the statistical significant difference between averages has been assessed.

questions	type	Rules	scores
Q17	Y/N	YES NO	+1 -1
Q18	Free text	Bacteria, xylella, xylella fastidiosa	+1
Q19	Free text	Effects: desiccation of leaves/canopy/sprouts/shoots, dry out, drying of tree Don’t know/wrong answer	+1 -1
Q20	Free text	Which vector: insect, cicadinae, “sputacchina”, phylenius, phylenius spumarius Don’t know/wrong answer	+1 -1
Q21	Free text	Starting point of disease: young sprouts, canopy, leaves, shoots	+1
Q22	Y/N	Effect on other crops: YES NO/DON’T KNOW	+1 -1

Domain RISK: preliminary results

DKI decreases as following:
Puglia (I) 0,95 > Puglia (NI) 0,79 > Crete (NI) 0,52

FPI decreases as following:
Puglia (I) 1,00 > Puglia (NI) 0,73 > Crete (NI) 0,60
More farm acceptance then real implementation



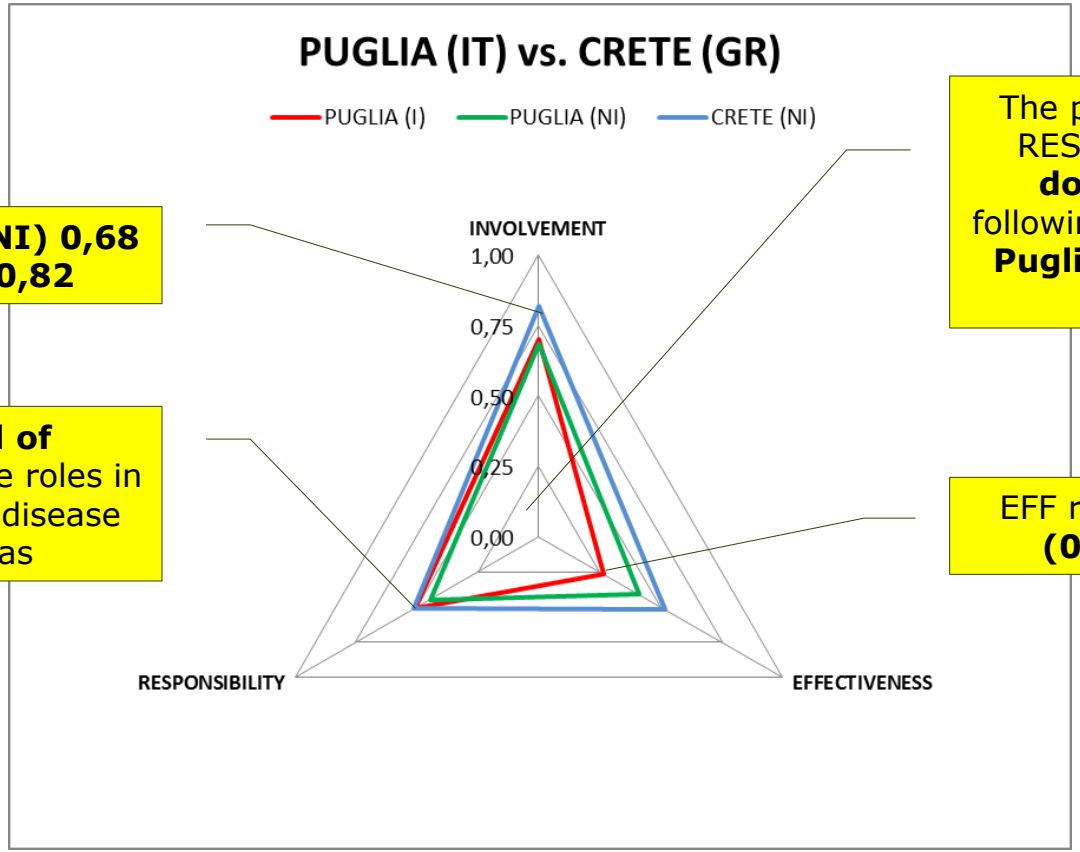
The plot area (DKI / DPI / FPI) for **RISK domain** decreases as following:
Puglia (I) 1.00> Puglia(NI) 0.54> Crete (NI) 0.39

Low perception risk in general but significant differences
The perceived risk Puglia (I) 0,70 > Crete (NI) 0.52 > Puglia (NI) 0.45

Domain GOVERNANCE: preliminary results

INV high in **Puglia (NI) 0,68 and Crete (NI) 0,82**

RES : **low level of knowledge** about the roles in the management of disease for all pilot areas



The plot area (INV / EFF / RES) for **GOVERNANCE domain** decreases as following: **Crete (NI) 0,48 > Puglia (NI) 0,33> Puglia (I) 0,29**

EFF reach the **lower level (0,26) in Puglia (I)**

Analysis of data: correlations among indices/indicators

A preliminary analysis of data expresses:

- a positive correlation (from moderate to weak) among all the 3 variables included in the RISK domain:
  - FPI/DKI (0,569 **) moderate
  - FPI/DPI (0,458 **) moderate
  - DKI/DPI (0,225 *) weak

The positive correlation among the levels of KNOWLEDGE, PERCEPTION and adoption of PRACTICES indicates where to intervene**: improve level of K, inform about real risk, disseminate good practices**

- a weak positive correlation in the GOVERNANCE domain among:
  - INV/EFF (0,300 **) weak
  - INV/RES (0,279 **) weak

The correlation among INVOLVEMENT, EFFECTIVENESS and the knowledge of RESPONSIBILITY could indicate how to intervene **: focus group (community of practice) suggested by stakeholders**

* significance to level 0,05 (5%)
** significance to level 0,01 (1%)

Conclusions

- In **INFECTED** pilot area, the very high score of the RISK domain is obtained despite the lower level in the GOVERNANCE.

- In **INFECTED** pilot area, a shared and clear decision making process is missing

The combined effects of these two factors could have hampered the application and the effectiveness of containment measures

- In **NOT INFECTED** pilot area, where the score of the RISK domain is lower, the potential role of GOVERNANCE can be very important to design intervention strategies able to prevent local people concerns and reactions and build consensus about the application of measures in the future

Next steps

In Puglia

- Establish a focus group (community of practice) built on respondants willing to be involved
- Within the focus group: addressing specific lack of knowledge and needs outlined by respondants
- Build a common vision to reduce conflicts: knowledge, share practices (IA vs NIA), perspectives / measures
- Communicate with institutions and local government

Regional

- Enlarge the analysis to other regions (CSs) could help improve knowledge and governance in I-areas and NI-areas and upscale the analysis

Thank you!

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