

PROGRAMME FOR EARLY WARNING SURVEILLANCE IN THE THRACE REGION OF BULGARIA/GREECE/TURKEY

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INTRODUCTION

The Thrace region of Bulgaria, Greece, and Turkey has historically been a **high-risk area** for the introduction of FMD into Europe. By coordinating activities and taking a risk based approach to surveillance, greater **confidence** can be achieved in the **FMD-free status** of the region (Bulgaria and Greece are officially FMD free and Thrace region of Turkey is officially FMD free with vaccination) and increase the likelihood of **early detection** of an incursion of the disease.

A programme for animal disease **early warning surveillance** was established in the Thrace region of Bulgaria/Greece/Turkey within the EuFMD workplan – component 1.3, in order to implement a system which improves the chances of detecting an outbreak of Foot and Mouth Disease and other relevant dangerous ruminant diseases, at an early stage and which provides **confidence in disease freedom of the area**.

PROGRAMME

The following actions have been implemented in 2013-2014:

- A **co-ordination framework** has been established between Bulgaria, Greece, and Turkey in order to implement the programme, share the results of the activities and facilitate the communication between the countries;
- A **risk based surveillance** has been designed and implemented in the area. The surveillance include multiples activities and it has been targeted for each country to detect different level of seroprevalence according to risk and feasibility;
- A **web-database** has been created in order to allow the recording, on real time basis, of the controls carried out and the related outcomes;
- A **deterministic model** for the analysis of FMD surveillance data to demonstrate freedom from disease has been developed. The model uses a range of data inputs and makes a number of assumptions and simplifications (e.g. epi-units grouped in two levels of risks, probability of infection estimated as annual probability, estimated sensitivity of clinical surveillance).



Fig. 1 – Thrace region

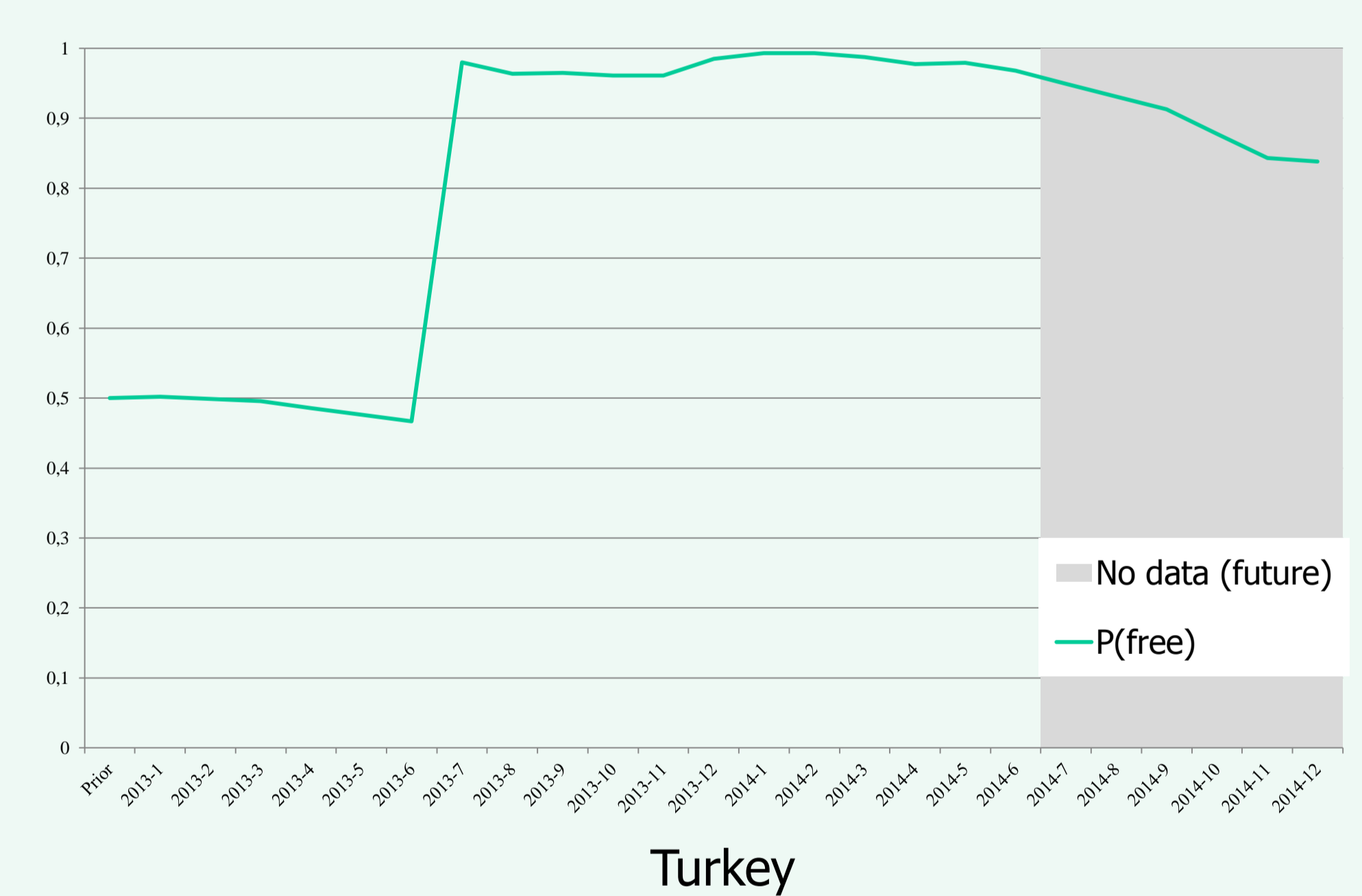
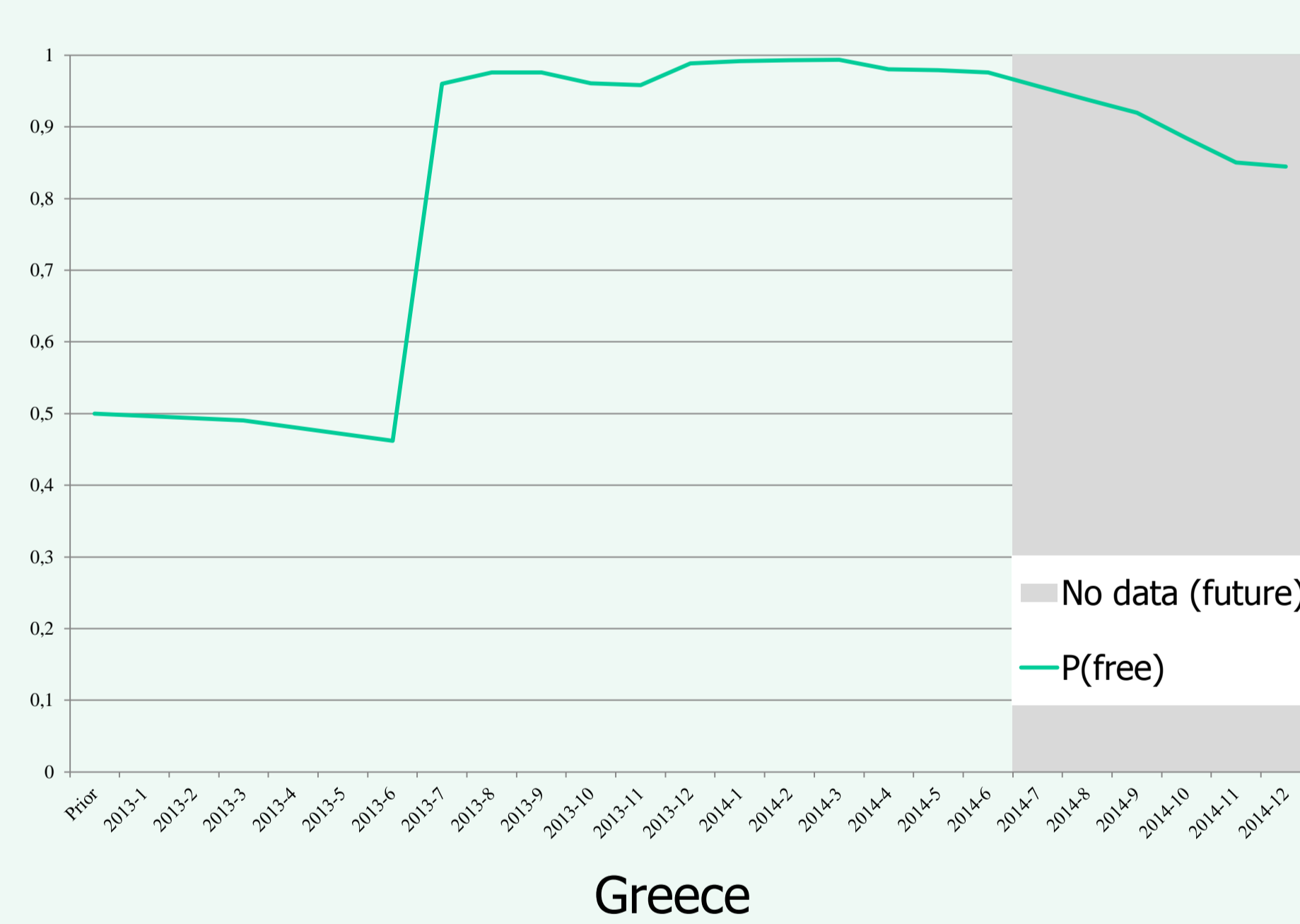
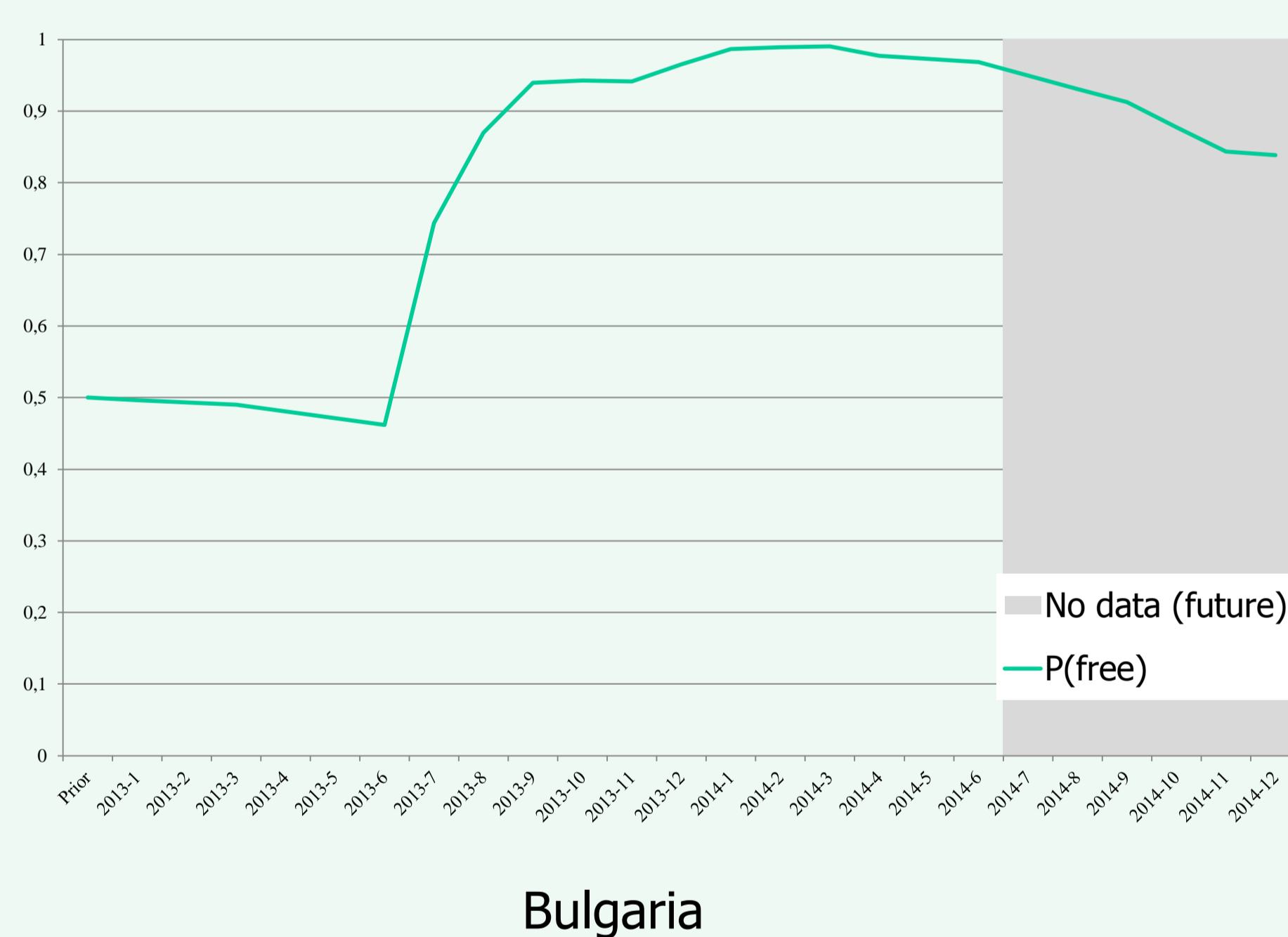


Fig. 2 – Confidence of disease freedom in the area
(in grey area the prediction if surveillance activities would stop)

RESULTS AND DISCUSSION

- The **networking** built between the three countries allows for a constant update on the major threats present in the area, the continuous monitoring of risk of FMD introduction in the area and the control measures implemented.
- Three elements are considered as **strategic** in order to calculate the progressive probability of freedom from FMD over time and **optimizing the surveillance activities**:
 - 1- the surveillance has been targeted and implemented in the territory of the three countries **on risk based approach**;
 - 2- the surveillance has been designed considering a **combination of multiple surveillance** components including: passive farming reporting, surveillance at the abattoir, active clinical surveillance, serosurveillance. The total surveillance sensitivity achieved depends both on the component sensitivity and the number of components that are combined;
 - 3- the surveillance is continuous and it allows **accumulation of historical evidence** of freedom over time.
- The web-database permits the **regular monitoring** of the activities, the availability of **up-to-date information** and the possibility to adapt the data entry to the needs of the countries (e.g. language, animal production, activity)
- The **curve of confidence** achieved for disease freedom probability is **above 95%** in each of the countries
- The surveillance implemented with the target to rise the confidence of FMD freedom and improve the early detection capacity can be easily applied to **other diseases**. Active and passive clinical surveillance for Sheep and Goat Pox and Peste des Petits Ruminants has been recently included in the programme.