



# FMD SITUATION IN TURKEY

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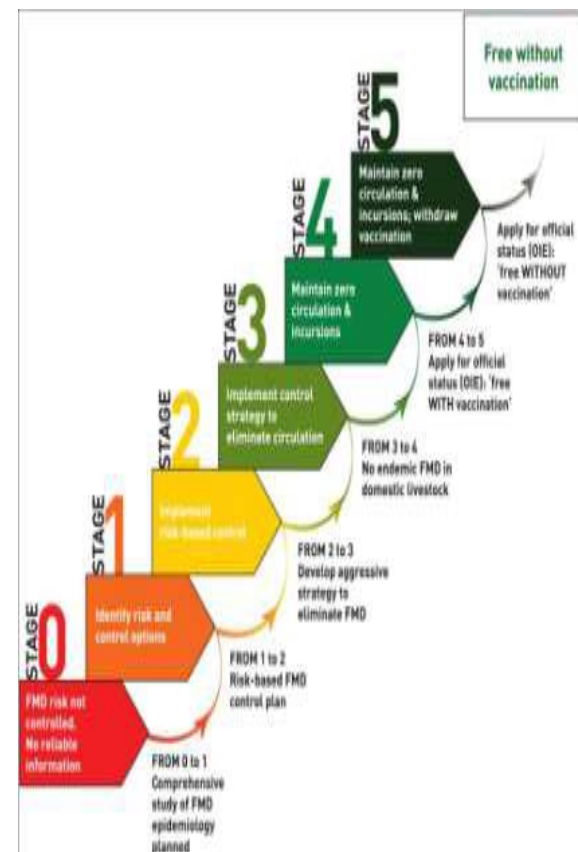
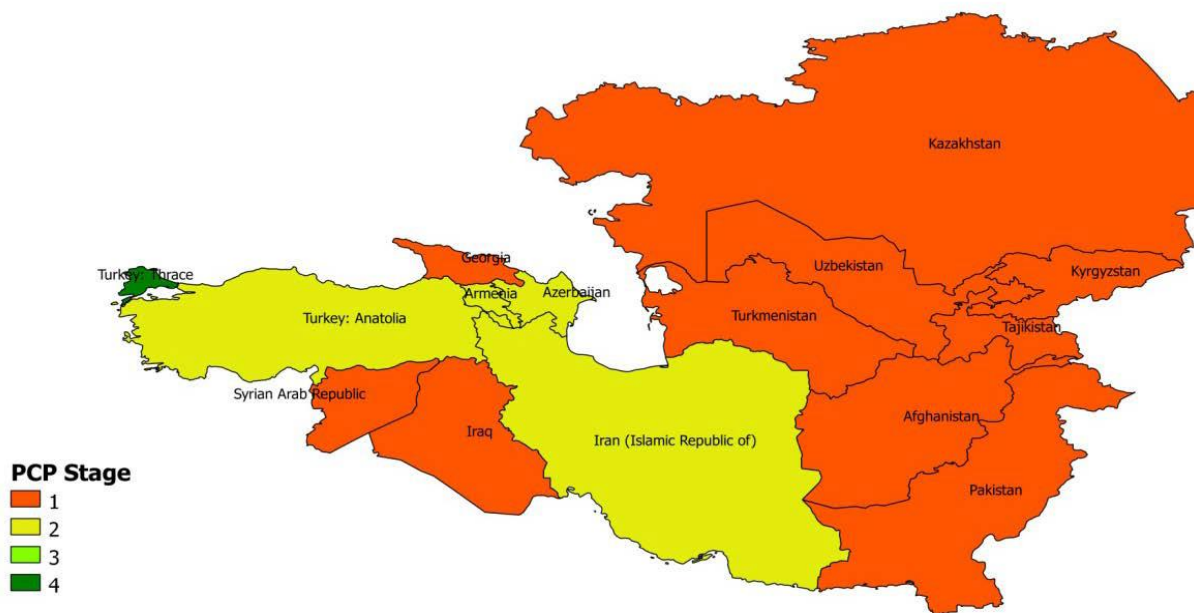
**General Director**

**General Directorate Food and  
Control (GDFC)**



## PCP stage level for Turkey

- Thrace: Stage4
- Anatolia: Stage2



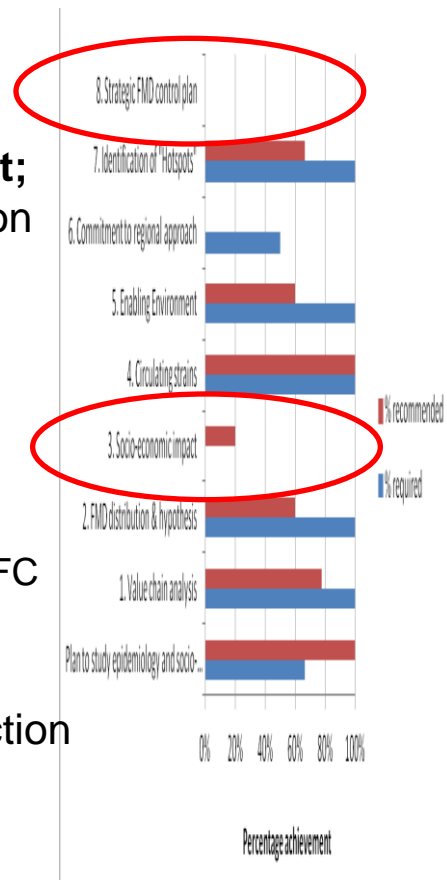


## GAPS IDENTIFIED IN 2014 ROADMAP MEETING

### • **TURKEY NATIONAL RISK BASED STRATEGIC PLAN FOR FMD**

#### ✓ The plan has been developed and implemented successfully

- ✓ **Vaccine production capacity increased by >6PD50 potency**
- ✓ **Vaccination campaign organized considered risk assessment;**
  - ✓ before delivering for grazing on spring and Kurban Festival on Autumn
- ✓ **Vaccination campaign implemented with higher coverage; including booster**
- ✓ **Outbreak management improved;**
  - ✓ reaching each outbreak and investigating epi-team appointed by GDFC
- ✓ **Animal movement regulated by identified risk;**
  - ✓ Assured enough protection for animal to be moved-two injection
  - ✓ TURVET database system restricted automatically for non-vaccinated animal
- ✓ **Epidemiology&Monitoring Unit has been improved**

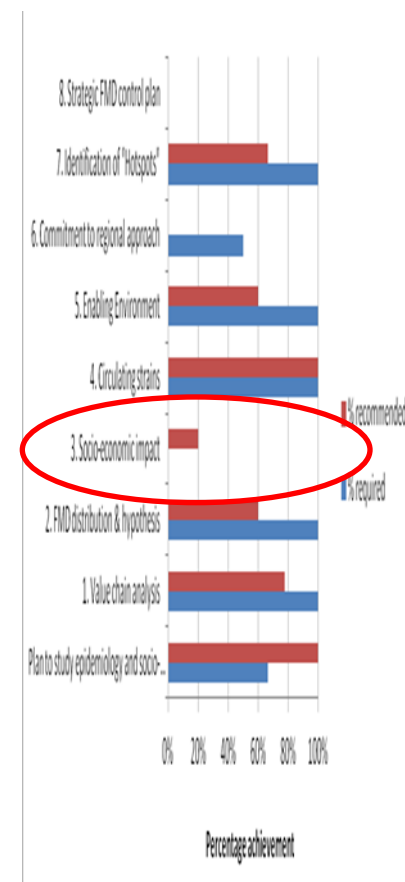




## GAPS IDENTIFIED IN 2014 ROADMAP MEETING(2)

### ■ *SOCIO-ECONOMIC IMPACT OF FMD IN TURKEY*

- ✓ **Cost and benefit analysis (CBA) has been estimating.**
- ✓ **The final outcomes will be expected till June**
  - ✓ **The Strategy will be updated by timeline of control plan including activities to be adopted with context by regionalization of Anatolia**
  - ✓ **Budget allocated for FMD will be revised based on CBA**







# Disease Situation in 2014 and 2015



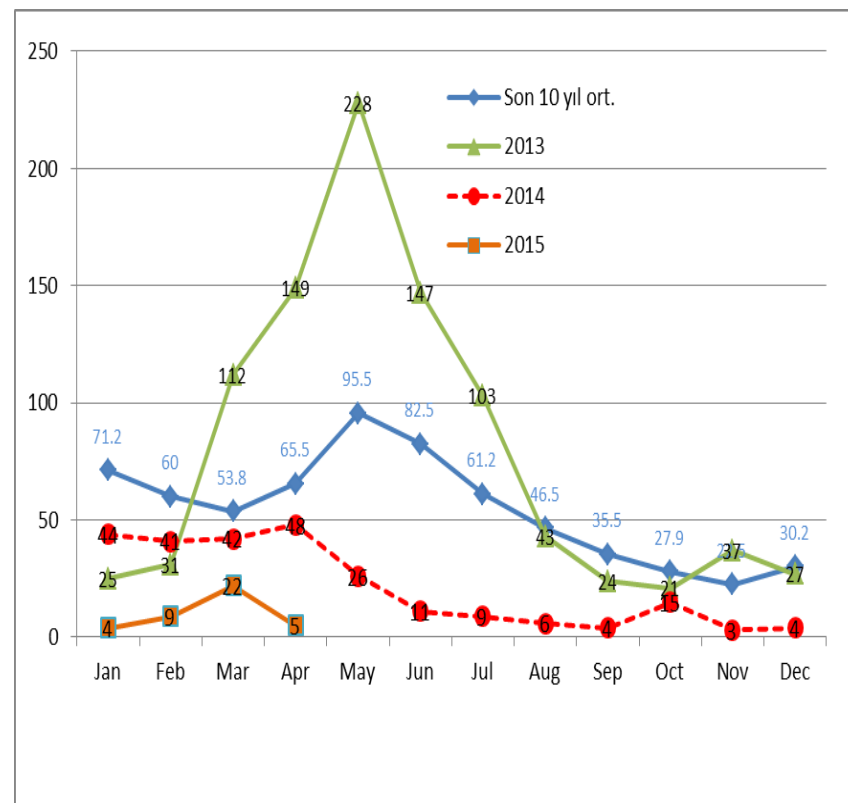
## ***CIRCULATING STRAIN***

- FMD is endemic in Anatolia region in Turkey
- Current Circulating virus strains:
  - Serotype O (O PanAsiaII),
  - A (A Iran05) and
  - Asia-1 (Asia1/SINDH08)
- Thrace region has been free of FMD with vaccination since May 2010.



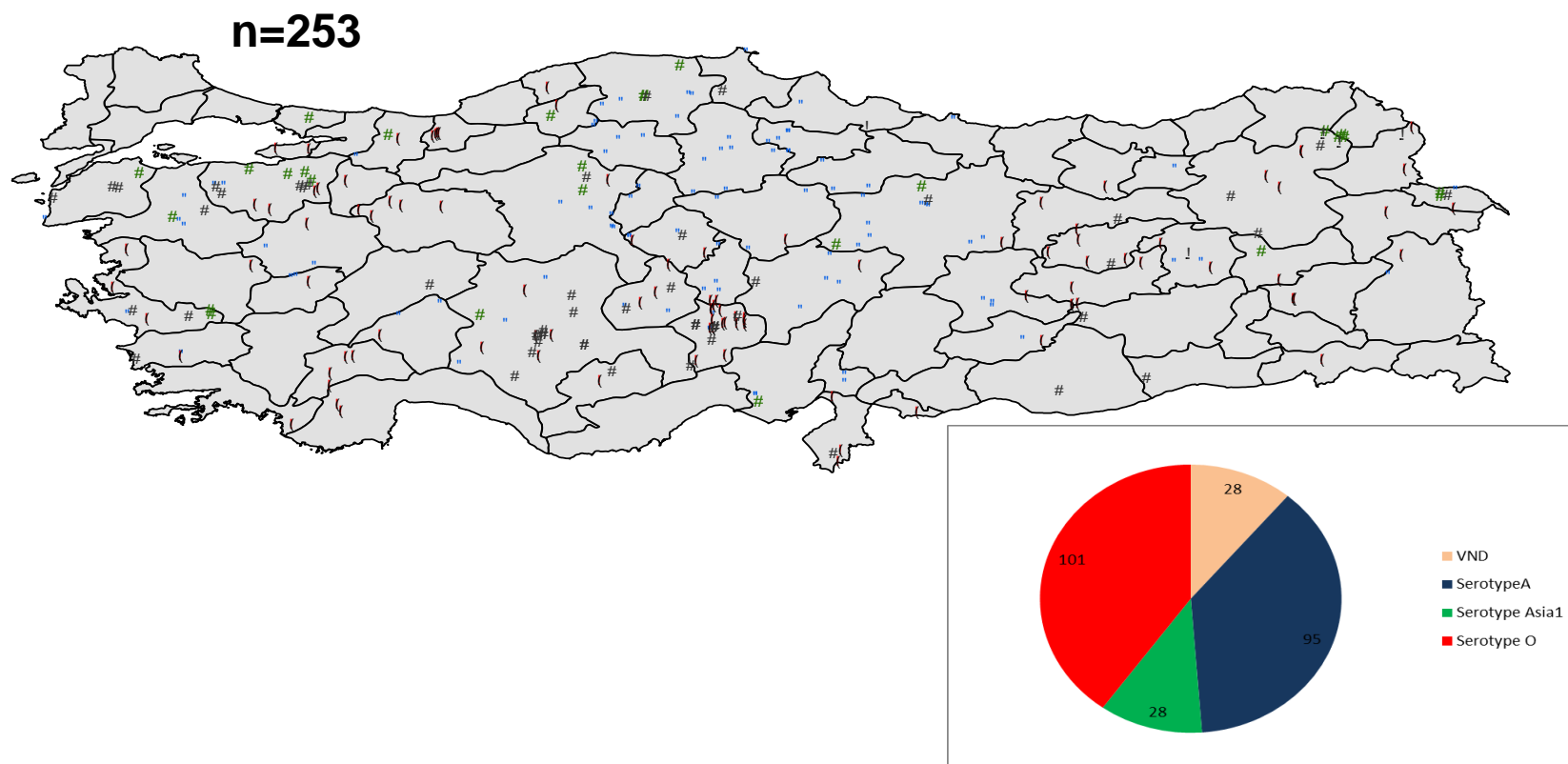
## Current disease trend

- According to statistical trend analysis of the FMD in susceptible population; mortality, morbidity and fatality rates decreased drastically in the overall trend in the country.
- This result shows that there is significant reduction in the spread of the disease due to FMD control program that successfully applied within the country in the latest years.





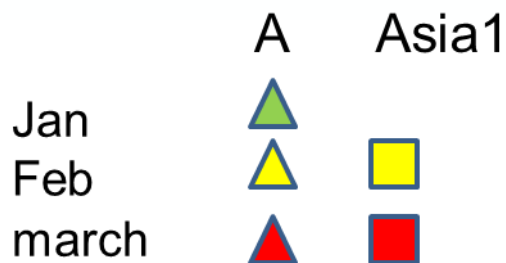
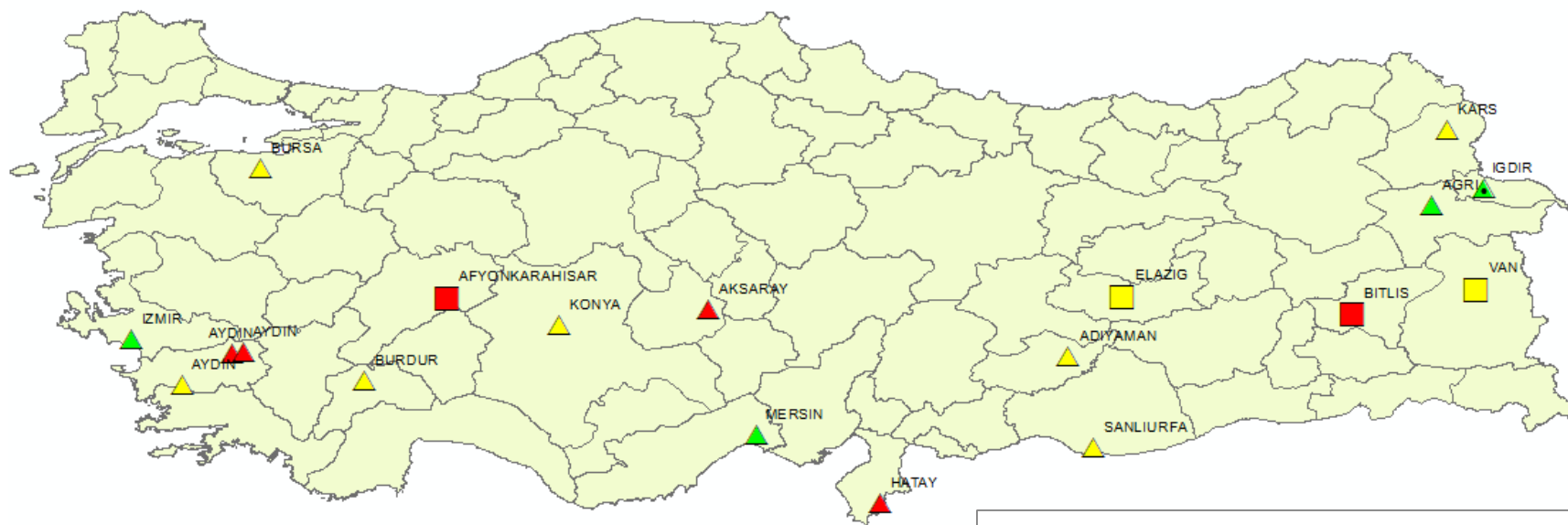
## Disease Situation in 2014



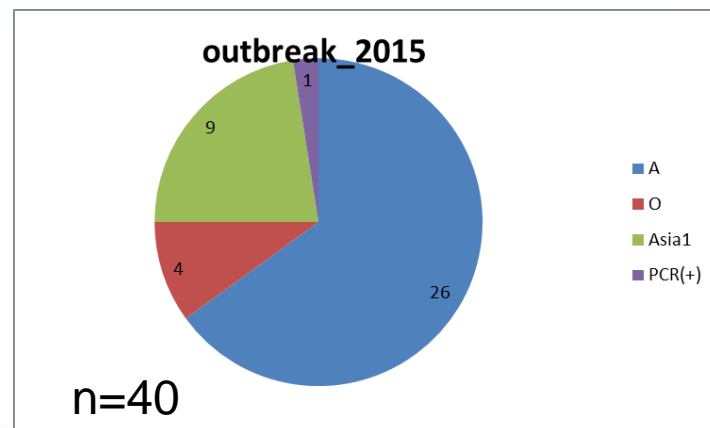




## Distribution of outbreaks in 2015



Map is till March





# Description of 2014-2015 FMD surveillance results



# Surveillance system in Anatolia

## Suerveillance activities conducted in the region:

- **Active and passive surveillance**
  - Conducted routine based by field veterinary service
  - Outbreak investigation for each notified outbreak
  - Entering all outbreak data to Turkvet database
  - Registration all vaccination data individually to Turvet
- **Diagnosis**
  - Serotyping all outbreak samples
  - Genetic analysis enough numbers of samples representing disease dynamic and serotyping
  - Vaccine matching testing
- **Serosurveillance**
  - Estimation NSP prevelance&monitoring antibody level and vaccination performance
- **Active clinical surveillance**
  - Has been initiated in East and south Eastern regions by specific statistical targeted animal for each province



# Surveillance Results

## 1. Disease spread dynamics

a. **Incidence rate:** Overall incidence rate: 0.056 and 0.0074 /a period at covering last 12 month for cattle and SR respectively

b. **Trend Analysis:**

Mortality rate difference between 2005 and 2013 is not statistically significant ( $p=0.236>0.05$ ). Since beginning of 2014, mortality rate sharply decreased

Morbidity rate difference between 2005 and 2013 **is statistically significant** ( $p=0.002<0.05$ ). Since beginning of 2014, morbidity rate sharply decreased; significant decreasing observed on incidence

Fatality rate difference between 2005 and 2013 **is statistically significant** ( $p=0.001<0.05$ )

c. **Vaccination breakthrough wasn't determined.** Based on outbreak investigation and vaccine efficacy study, current vaccine used is sufficient



## Surveillance Results (2)

### 2. Genetic Analysis:

**84** isolates, 58% of total sample within last 12 months, were tested by nucleotide sequencing, for three serotype circulated in Anatolia

### 3. Vaccine matching

Vaccine suitability is checked routinely by VNT r value testing. 42 vaccine matching test were performed for three serotype, majority of serotype A and further Asia1

Isolates were matched with vaccine strains used in Turkey; r values  $>0.3$

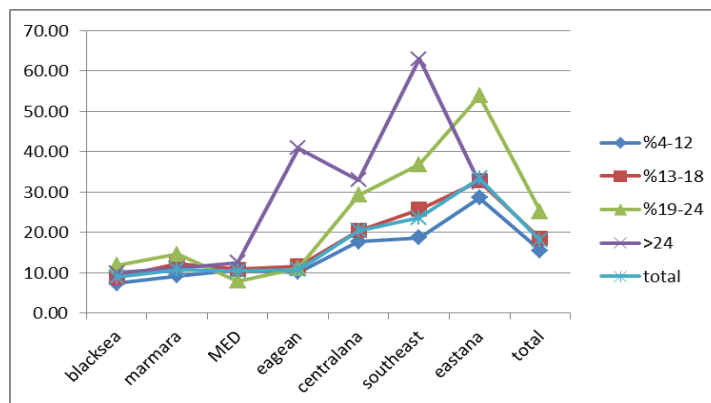




## 2014 serosurveillance

- Number of outbreak has been decreased since beginning of 2014; consequently drastic declined has been achieved this year
- Current FMD clinical incidence is very low; 0.056
- the results of serosurveillance, particularly for older aged group is not reflected current disease situation, since this sero-surveillance has been conducted on Spring 2014.
- Therefore, a new surveillance will be conducted this year to estimate realistic prevalence for virus circulation

	Age clustering				
region	%4-12	%13-18	%19-24	>24	total
blacksea	7.28	8.85	11.89	0.00	8.90
marmara	9.20	12.23	14.62	10.00	10.79
MED	10.68	10.86	7.89	11.11	10.36
eagean	10.12	11.57	11.08	12.50	10.71
centralana	17.65	20.45	29.21	40.88	20.37
southeast	18.62	25.73	36.75	32.95	23.60
eastana	28.55	32.75	53.85	62.96	33.36
total	15.46	18.38	25.09	32.28	17.94



**NSP prevalence for LR by clustered age groups vs region**

### Objectives:

- The approach for both species (LR&SR) : estimation of virus circulation in Anatolia considered NSP prevalence estimated in 2012 serosurveillance.
- b) The approach for LR: to figure out protective immunity level in vaccinated animals and evaluate vaccination and vaccine performance.

Design: A two-stage sampling strategy was used:

- **NSP prevalence:** taking 2012 prevalence points as expecting prevalence with 95% CL for 1st sampling stage; 10% expecting prevalence within the epi unit
- **Ab SP Serosurveillance:**
  - Assessment vaccine and vaccination
  - By expecting 80% protection each district



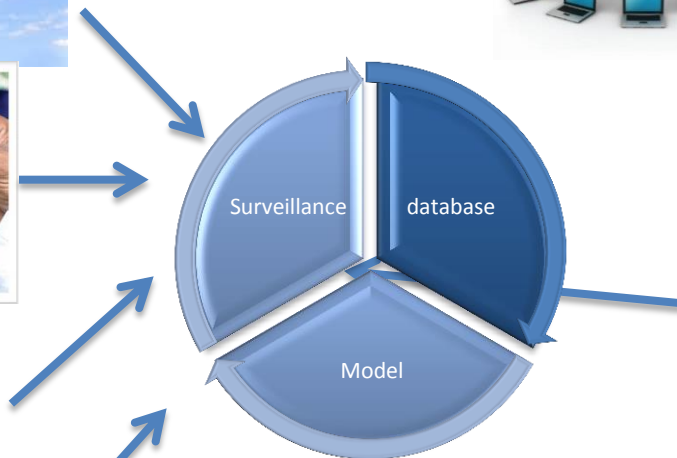
## Thrace Region

- **Thrace region is FMD free with vaccination since 2010**
- For early detection and consequently confidence in freedom:
  - Established check points for movement control
  - Movement control regulate appliance with OIE code, 5.8.14
  - Surveillance systems improved and implemented
  - Vaccination implemented both species, LR&SR, with 97-100% vaccination coverage
  - Stamping out policy in case of disease emergency
- **Positive impact by free status**
  - Increasing production rate particularly milk yield
  - Increase investment on dairy
  - Increase population size
  - The most important one is: a model and motivation for Anatolia on disease elimination



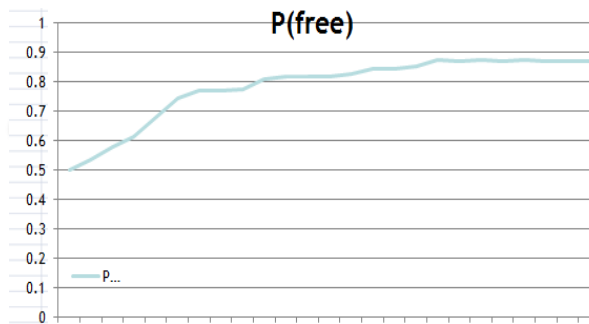
# Surveillance system in Thrace region

Clinical examination



With four cycles a year,  
-285 units (17100 cattle) and 114 units (1254 sera) has been checked by clinical examination and serologically respectively in per cycle.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100



## Surveillance activities conducted in the region:

- **Active and passive surveillance**
  - Routine based by field veterinary service
  - Specific for Kurban festival time particularly for Istanbul
- **Risk based Surveillance program**
  - Based on relative risk factors
    - Clinical and serological surveillance based on specific design in high risk area
    - Clinical surveillance for low risk area
- **Annual serosurveillance**
  - Covering all species in whole region aimed to substantiate freedom the disease



# Description of FMD control plan





# FMD control plan

- Mass vaccination
- Diagnosis and Genetic and Antigenic Characterization of Isolates
- Epidemiological investigations
  - \_ Active and passive surveillance
- Routine control measures in case of disease outbreak (biosecurity, restriction, quarantine)
  - Each outbreak has been investigated by epi-team and analysis in favour of contain the virus in outbreak place
  - With a risk based approach, update control measure in light of all results of investigation including serological and molecular epidemiology
- Control of animal movements and markets
- Training vets and awareness activities for farmer
- Awareness campaign for stakeholders
- Vaccine effectiveness study to evaluate vaccine effectiveness, used and application in the field





## Vaccination policy 2015

### Anatolia:

- Twice a year for LR as campaign:
- Improved cover: >90 % of bovine population (14million doses/per campaign)
  - Strains: OTUR07 (PanAsiaII), ATUR14 (A05), Asia1 TUR11 (Sindh-08)
  - Improved antigen content: 6PD50 vaccines
- Ring vaccination response to outbreaks.
- Booster dose for calves
- Vaccination for SR herd in East&South Eastern area based on risk assessment
- Sheep&goat vaccination upon request by farmer



# Description of FMD control plan (national or international projects)

## The strategy plan has been improved:

*(In framework with EC project on “Preparation Veterinary Strategy Document”)*

Based on Cost and benefit analysis (CBA) for FMD;

- The plan;
  - with an approach progressive and regional is to aimed control and eradication of the disease
  - with 3 phase: 5 years-10 years-15 years
  - Including the other outputs:
- Evaluation of structure of veterinary service based on previous OIE PVS report
- Strategy plan for identification and registration animal and animal movement including animal markets



## Expected results and current assessment of the control plan achievements

- Considerable reduction has been achieved for FMD impact by current risk based control policy
- With an approach progressive and regionalization, progress to PCP stage 2 will be realized by 2016 through west and east of the Anatolia region

*For PCP Stages 2 and 3*

•*Stage 2:*

- *Are control measures reducing FMD impact?*

•*Stage 3:*

- *Are control measures moving towards FMD elimination?*



# Research plans

- vaccine effectiveness studies to evaluate vaccine and vaccination- ongoing
- Research&Development studies for improvement of vaccine production at Şap Institute-ongoing
- Validation of Non-Invasive Sampling method for wild boar in endemic setting- under evaluation