SIGMA – EFSA COMPREHENSIVE ANIMAL DISEASE DATA COLLECTION

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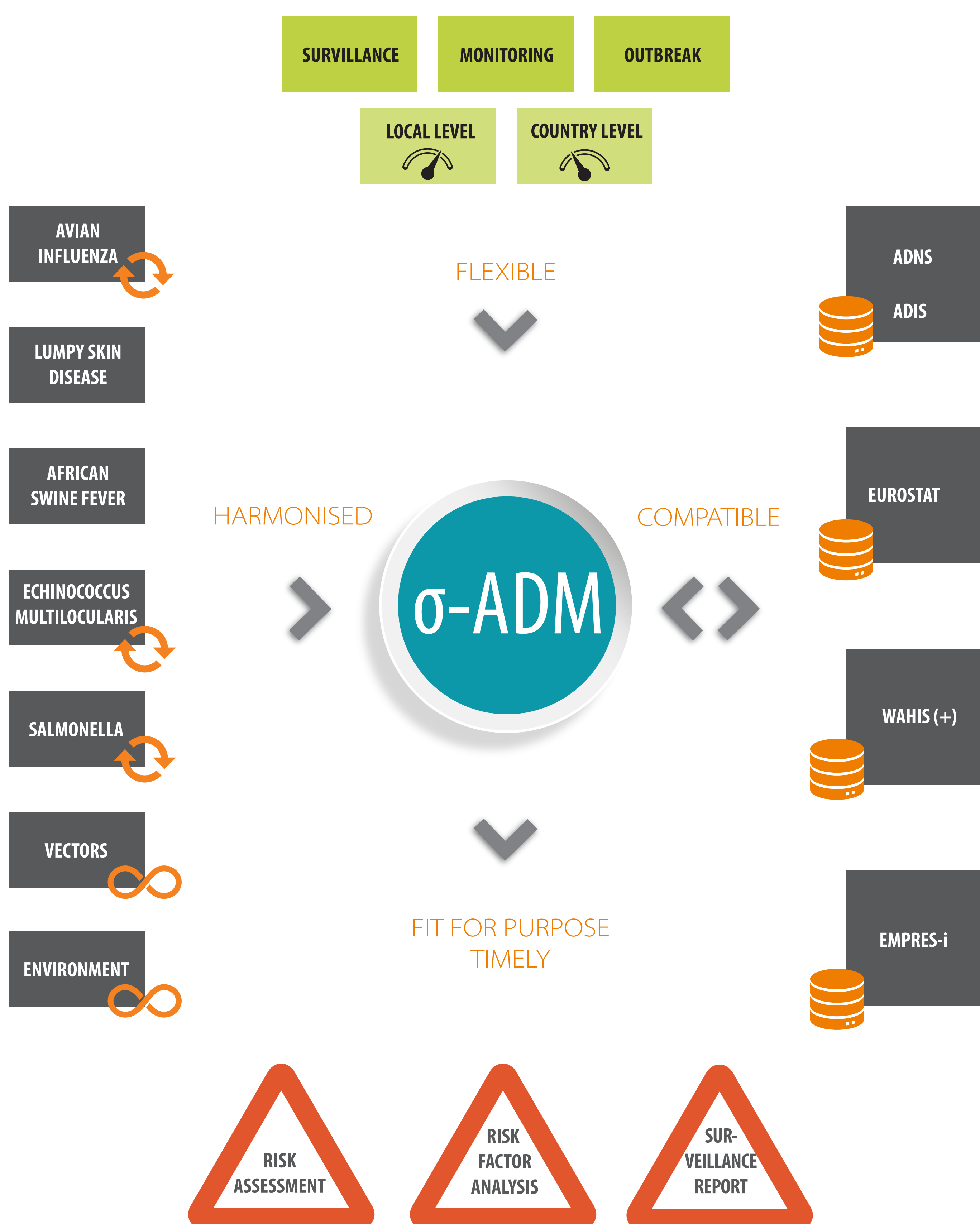
BACKGROUND AND AIMS

Risk assessors are being asked to provide better technical support to risk managers in the field of animal diseases after limitations were identified during recent outbreaks of animal diseases in Europe. The European Food Safety Authority (EFSA) therefore decided to harmonise data collection activities related to animal disease outbreaks and disease surveillance. The result will benefit all involved stakeholders: EFSA will have high quality and up to date data, risk managers will get timely and robust scientific advice, Member States will be able to query the data they submitted, produce national reports, and have an overview of the European situation in "real time".

The foundation of this harmonisation process will be a unique EFSA Animal Disease Data Model as part of a project called SIGMA(σ-ADM). The process of building the σ-ADM will start with the terms of reference provided by the European Commission and Member States, and the preliminary plan of analysis. This is heavily based on the experience of past and ongoing data collections (see figure on the right).

As a result, σ-ADM will be a compromise between the ambition of addressing the risk assessment questions using the most sophisticated methodology and the pragmatism of actual data availability (from Member States and international databases). The σ-ADM will be designed to be harmonised, compatible, flexible and fit for purpose.

? Risk Assessment Questions → Preliminary Plan Analysis

Ongoing Data Collection activities & related Data Models →

σ-ADM

σ-ADM FEATURES

SURVILLANCE MONITORING OUTBREAK
LOCAL LEVEL COUNTRY LEVEL

AVIAN INFLUENZA
LUMPY SKIN DISEASE
AFRICAN SWINE FEVER
ECHINOCOCCUS MULTILOCULARIS
SALMONELLA
VECTORS
ENVIRONMENT

FLEXIBLE
HARMONISED σ-ADM COMPATIBLE
FIT FOR PURPOSE TIMELY

ADNS ADIS
EUROSTAT
WAHIS (+)
EMPRES-i

RISK ASSESSMENT RISK FACTOR ANALYSIS SUR-VEILLANCE REPORT

HARMONISED
Harmonisation will be achieved not only across ongoing EFSA data collections (internal harmonisation), but also across data providers in different Member States (external harmonisation). Each country has its own approach to naming and classifying information generated in the field. Where alignment is not possible, the σ-ADM will be…

FLEXIBLE AND ADAPTED TO ENSURE THE BEST POSSIBLE OUTCOME
The σ-ADM will be flexible enough to adapt to different approaches taken by Member States to, for example, naming convention and categorisation. This information will be standardised using detailed data mapping and ad hoc data transformation. The goal is to make use of all information available at European level.

COMPATIBLE
The σ-ADM will be compatible with the following international animal health databases: the Animal Disease Notification System (ADNS) from the European Commission (EC); the Animal Disease Information System (ADIS), under development by the EC in collaboration with the World Organisation for Animal Health (OIE); the OIE's World Animal Health Information System (WAHIS); and the Global Animal Disease Information System EMPRES-I from the Food and Agriculture Organization of the United Nations (FAO).

FIT FOR PURPOSE
The σ-ADM will integrate a great amount of heterogeneous data in a harmonised way and will, therefore, be fit for different types of analyses and purposes. For example, the data on poultry populations will fit the avian influenza outbreak/surveillance analysis as well as the Salmonella monitoring assessment in the context of the EFSA/ECDC zoonoses summary report.

In addition, the σ-ADM, which will be developed and agreed with relevant stakeholders, above all the Member States, will increase EFSA's preparedness as it will facilitate a more efficient data collection during outbreaks, i.e. higher quality data in a shorter time and timely replies to requestors.

WHAT'S NEXT?

Once the σ-ADM is established, EFSA will work together with the Member States, in the framework of the SIGMA project, to improve and automate the flow of data from the national databases to EFSA's Data Warehouse. The idea is to automatically extract, upon agreement with the MSs, the relevant data and transform those data so that they match with the σ-ADM. This approach means the Member States do not have to modify the way they work. The data will be then pre-validated by the data provider and uploaded to the EFSA Data Collection Framework (DCF) for analysis. Each Member State will be able to query its data in the SIGMA database and generate reports related to its territory and/or aggregated at EU level, making it possible to combine different types of data (animal population, lab data etc), all standardised and validated.

efsa
European Food Safety Authority