

# UPDATE ON TASK FORCE ON DATA COLLECTION AND DATA MODELLING

73<sup>RD</sup> MEETING OF THE EFSA ADVISORY FORUM  
18.09.2019. HELSINKI

# MAIN OBJECTIVE

- The main objective of the Task Force is *to overview the data collection and reporting processes and the data model and IT infrastructure used, from a **strategic perspective**, and to formulate recommendations at a strategic level.*

# AGENDA OF THE 5<sup>TH</sup> MEETING OF THE TF 17<sup>TH</sup> SEPTEMBER 2019, HELSINKI

- Discussion on Interim Report on Data Collection and Reporting
- Discussion on EU Interoperability Framework
- Discussion on OneHealth and other ongoing projects of relevance: ORION, NOVA, RAKIP, SENTINEL
- Discussion on Data Modelling
- Discussion of opportunities offered by emerging technologies
- Discussion of Feedback from Focal Point meeting of 4th September 2019
- Discussion on remaining identified topics and proposed prioritisation

AGENDA ITEM 1

# **INTERIM REPORT ON DATA COLLECTION AND REPORTING**

# INTERIM REPORT ON THE ACTIVITIES OF THE TASK FORCE

- Draft report elaborated and discussed
- Summarizing the work done so far in the area of data collection and reporting
- **Submitted to Advisory Forum for discussion and endorsement**

# INTERIM REPORT ON THE ACTIVITIES OF THE TASK FORCE

## MAIN CONCLUSIONS AND RECOMMENDATIONS

- **IMSOC** is and will be one of the most important data hubs related to the safety of the food chain.
- It is an imperative for EFSA, its sister EU agencies, Member States and the Commission to **collaborate on data models and reporting requirements during legislation development.**

# INTERIM REPORT ON THE ACTIVITIES OF THE TASK FORCE

## MAIN CONCLUSIONS AND RECOMMENDATIONS

- It is recommended to initiate discussions on the usefulness, feasibility and consequences of elaborating a common single **“European food safety data model”** along the food chain in the short term.
  - Consideration should be given to **standardizing as far as possible the existing data models for subjects** (such as traceability, control, etc.) and to **using comparable terms** (e.g. EFSA catalogues) for them.

# DATA COLLECTION AND REPORTING: MEMBER STATE REPORTING IN THE FOOD/FEED DOMAIN

## MAIN CONCLUSIONS AND RECOMMENDATIONS

- However:
  - complete standardization is not possible
  - it is also not possible to solve the various problems posed by the huge and growing set of reporting and analysis needs by standardization alone
- A parallel discussion on the **applicability of solutions in the middle or long run other than relational databases is necessary.**
  - Carefully **explore other, modern solutions** (e.g. data lakes, data ecosystems), taking into account the advantages and the possible challenges as well.
  - This could – for example – mean defining a **minimum set of metadata** that would allow AI tools to extract useful information from dissimilar data models.



# DATA COLLECTION AND REPORTING: MEMBER STATE REPORTING IN THE FOOD/FEED DOMAIN

## MAIN CONCLUSIONS AND RECOMMENDATIONS

- **Good practices aimed at data interoperability** should be sought. Seeking to connect with data modelling solutions already in progress is encouraged as a pragmatic approach.
- **Food safety certification and quality assurance systems** are changing
  - With the advent of internet of things, big data and blockchain based solutions, **traceability systems** will be at the core of those changes
  - It is recommended to explore deeper this area and assess its impacts on EFSA risk assessment, foodborne outbreak investigation and general data governance.

# DATA COLLECTION AND REPORTING: MEMBER STATE REPORTING IN THE FOOD/FEED DOMAIN

## MAIN CONCLUSIONS AND RECOMMENDATIONS

- **Food consumption and food composition data** are of high value in risk assessment, nevertheless, the collection of these data is not as developed and systematic as its value would indicate.
  - There is a strong need for standardized food consumption and food composition data adequately coded and validated.
  - EFSA, Commission and Member States shall **consider new approaches to collecting** food consumption and composition data and **also to financing** the data collection.

# DATA COLLECTION AND REPORTING: MEMBER STATE REPORTING IN THE FOOD/FEED DOMAIN

## MAIN CONCLUSIONS AND RECOMMENDATIONS

- Data reporting and access to data all pose challenges to **data ownership** questions.
  - The legal framework for data ownership, access and trade remains incomplete and often ambiguous.
  - It is recommended to EFSA and MS to initiate and **join high-level discussions** to tackle these questions, especially in the case of access to data.

# DATA COLLECTION AND REPORTING: MEMBER STATE REPORTING IN THE FOOD/FEED DOMAIN

## POINTS FOR CONSIDERATION

- During group's discussions it became apparent that the issue of data availability could pose two different questions:
  1. How can we simplify existing and potentially future data streams and lessen the burden of reporting? → **Short term solutions**
  2. How can we ensure access to data necessary to conduct RA/RM? → **Long term solutions**

AGENDA ITEM 2

# **DISCUSSION ON EU INTEROPERABILITY FRAMEWORK**

# EU INTEROPERABILITY FRAMEWORK

- [https://ec.europa.eu/isa2/eif\\_en](https://ec.europa.eu/isa2/eif_en)
- The framework gives specific guidance on how to set up interoperable digital public services.
- It offers public administrations **47 concrete recommendations** on
  - how to improve governance of their interoperability activities,
  - establish cross-organisational relationships,
  - streamline processes supporting end-to-end digital services,
  - and ensure that both existing and new legislation do not compromise interoperability efforts.

# EU INTEROPERABILITY FRAMEWORK: 12 PRINCIPLES

**1: Subsidiarity and proportionality**  
1 recommendation

**2: Openness**  
3 recommendations

**3: Transparency**  
1 recommendation

**4: Reusability**  
2 recommendations

**5: Technological neutrality and data portability**  
2 recommendations

**6: User-centricity**  
4 recommendations

**7: Inclusion and accessibility**  
1 recommendation

**8: Security and privacy**  
1 recommendation

**9: Multilingualism**  
1 recommendation

**10: Administrative simplification**  
1 recommendation

**11: Preservation of information**  
1 recommendation

**12: Assessment of Effectiveness and Efficiency**  
1 recommendation

# EU INTEROPERABILITY FRAMEWORK: RECOMMENDATIONS

- #2 Publish the data you own as open data unless certain restrictions apply
- #6 Reuse and share solutions, and cooperate in the development of joint solutions
- #7 Reuse and share information and data
- #8 Do not impose any technological solutions that are technology-specific or disproportionate to the real needs
- #9 Ensure data portability, namely that data is easily transferable between systems
- #16 Use information systems and technical architectures that cater for multilingualism
- #18 Formulate a long-term preservation policy for information



# EU INTEROPERABILITY FRAMEWORK: RECOMMENDATIONS

- #20 Ensure holistic governance of interoperability activities across administrative levels and sectors
- #26 Establish interoperability agreements in all layers, complemented by operational agreements and change management procedures
- #27 Ensure that legislation is screened by means of ‘interoperability checks’, to identify any barriers to interoperability.
- #30 Perceive data and information as a public asset that should be appropriately generated, collected, managed, shared, protected and preserved.
- #32 Support the establishment of sector-specific and cross-sectoral communities that aim to create open information specifications

# EU INTEROPERABILITY FRAMEWORK: RECOMMENDATIONS

- #35 Decide on a common scheme for interconnecting loosely coupled service components
- #36 Develop a shared infrastructure of reusable services and information sources
- #38 Develop interfaces with base registries and authoritative sources of information
- #39 Match each base registry with appropriate metadata
- #42 Publish open data in machine-readable, non-proprietary formats
- #44 Put in place catalogues of public services, public data, and interoperability solutions and use common models for describing them
- #45 Where useful and feasible to do so, use external information sources and services

# EU INTEROPERABILITY FRAMEWORK: CONCLUSION

- Many recommendations are applicable to the food safety domain
- Many underpin recommendations of the TF
  - Confirmation of the work
- There are general problems present
- Solutions found elsewhere might be relevant to the food chain domain as well
- Next step: to develop a proposal regarding applicability of the ISA framework recommendations and their alignment with the AFTF recommendations

AGENDA ITEM 3

# **DISCUSSION ON ONEHEALTH AND OTHER ONGOING PROJECTS OF RELEVANCE**

# DISCUSSION ON ONEHEALTH AND OTHER ONGOING PROJECTS OF RELEVANCE

- ORION: One health suRveillance Initiative on harmOnization of data collection and interpretation
- NOVA: Novel approaches for design and evaluation of cost-effective surveillance across the food chain
- RAKIP: Risk Assessment Modelling and Knowledge Integration Platforms
- SENTINEL: US FDA post market monitoring system
  - code-to-data approach
- Next step: to further explore and distil an AFTF view of the connections with these projects

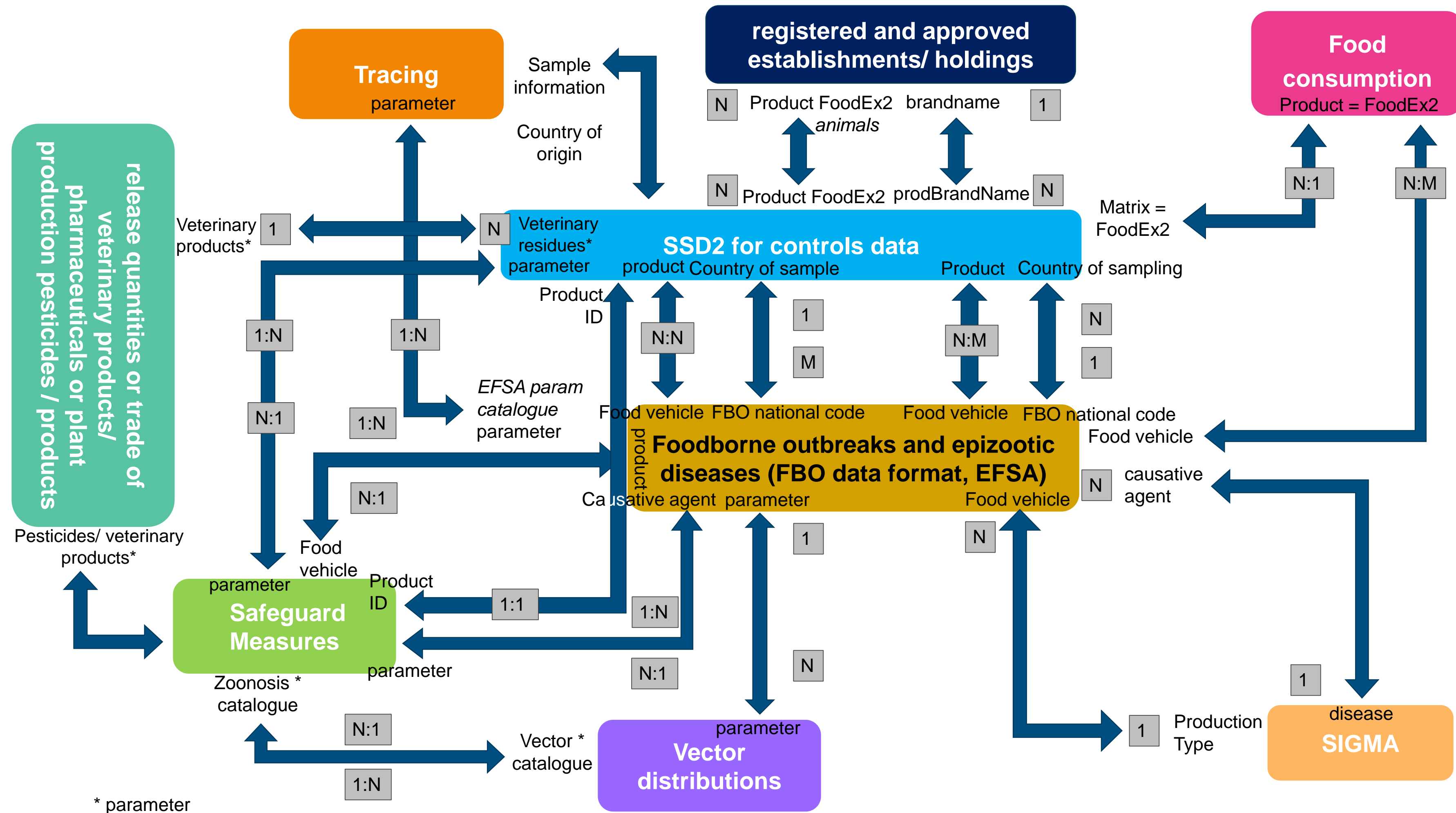
AGENDA ITEM 4

# DISCUSSION ON DATA MODELLING

# DISCUSSION ON DATA MODELLING

- A discussion document had been drafted
- Main topics:
  - Principles
  - Catalogues
  - Data formats and their linkages to each other to a “food safety data model”
  - Data sources (what and where), formats for further data exchange

# DISCUSSION ON DATA MODELLING





AGENDA ITEM 5

# **DISCUSSION OF OPPORTUNITIES OFFERED BY EMERGING TECHNOLOGIES**

# MANY SOLUTIONS BEYOND RELATIONAL DATABASES

- Data ecosystems (involving data lakes)
- Code-to-data approaches
- Hybrid solutions
- Solutions focusing on a narrow domain
- ...

# IMPORTANT CONSIDERATIONS

- In a connected database we still need structured data
- **However, full standardization/harmonization is not possible**
- Connecting different databases with different data models could be done through the reading phase
- For this, **better analytical sandboxes** are needed
- And **more data scientists** at food safety agencies

AGENDA ITEM 6

# **DISCUSSION OF FEEDBACK FROM FOCAL POINT MEETING OF 4TH SEPTEMBER 2019**

# FEEDBACK FROM THE FOCAL POINT MEETING

- Report of the activities of the Task Force to the Focal Point meeting
- Feedback:
  - New focal point agreement: FPs have to liaise with data providers
  - FPs to consider working on national action plan on **timeliness**: identifying barriers & what should be changed
  - Usefulness of data would be improved if they would be more timely, but this would imply changes in reporting (involvement of MS and COM)

AGENDA ITEM 7

# **DISCUSSION ON REMAINING IDENTIFIED TOPICS AND PROPOSED PRIORITISATION**

# DISCUSSION ON REMAINING IDENTIFIED TOPICS AND PROPOSED PRIORITISATION

- Outcome:
  - Exploration of **data capture at the point of sampling** for discussion at the next meeting
  - Exploration of **data quality dimension of timeliness** and **connect the Focal Point Discussion on Data Quality** with AFTF strategic recommendations for discussion
  - Review discussion document on **data modelling**
  - Draft **initial thought on what a future ideal food safety system might be able to deliver** in practical terms to support effectiveness of EU Food Safety activities
- 1-day meeting back-to-back with the 74<sup>th</sup> AF meeting in Parma

# ISSUES FOR FURTHER CONSIDERATION



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- **Draft interim report:**
  - Are we on the right track?
  - Do you have anything in addition to the original ToR?
- **Short term vs long term recommendations: a strategic viewpoint**
  - Important to understand that building the bright future may destroy some of the current investments/achievements
  - IT systems become obsolete after 7-10 years → build from scratch is better than patching
  - Striving for "full" standardization vs smart ecosystems
  - Expectation management & change management
- What does becoming a **data driven organization** mean in practice?
  - Organizational, procedural, capacity building changes
    - data-informed culture, agile working, room for experiments...
    - more expertise on data is needed → education, EU-FORA, DG on Capacity Building, ...

# THANK YOU!

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