Use of animals for scientific or educational purposes – Principles in Finland

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2017, updated 2021

EU regulates via national legislation

- **EU – directive 2010/63/EU**
  - Under European Convention (Council of Europe, ETS No 123, 1986)
  - Under the international OIE Terrestrial Animal Health Code, Chapter 7.8
  - Commission Implementing Decision on annual statistics and reporting 2020
  - Commission Recommendation 2007/526/EC complements the provisions of the Directive's provisions on the accommodation and care of animals
- **In Finland: Directive provisions in national legislation**
  - Act(497/2013) and Decree(564/2013) on the protection of animals used for scientific or educational purposes

Why is regulation implemented?

- **Protection of animals**– to ensure and promote animal welfare
  - Good living environment: operation authorisation & supervision
  - Procedures in projects: project authorisation
  - Competent and skilled personnel: Recommendations for education and training & Verification of competence
- **Promotion of 3R principles**
  - Replacement - korvaaminen
  - Reduction – vähentäminen
  - Refinement – parantaminen
- **Promotion of transparency**
  - Non-technical summaries of projects online
  - Statistics and reporting

When must regulation be applied (1/2)

1. Use of living animals for scientific or educational purpose

Living animals

- **Vertebrates** or cephalopods
- Also, **mammal, bird and reptile foetuses** during the last trimester of their development
- Also, independently feeding **larval forms**
- When used for **scientific or educational purposes**
- Including animals bred for scientific or educational purposes
  - Authorisation, competent personnel, appropriate environment and other requirements

When must regulation be applied (2/2)

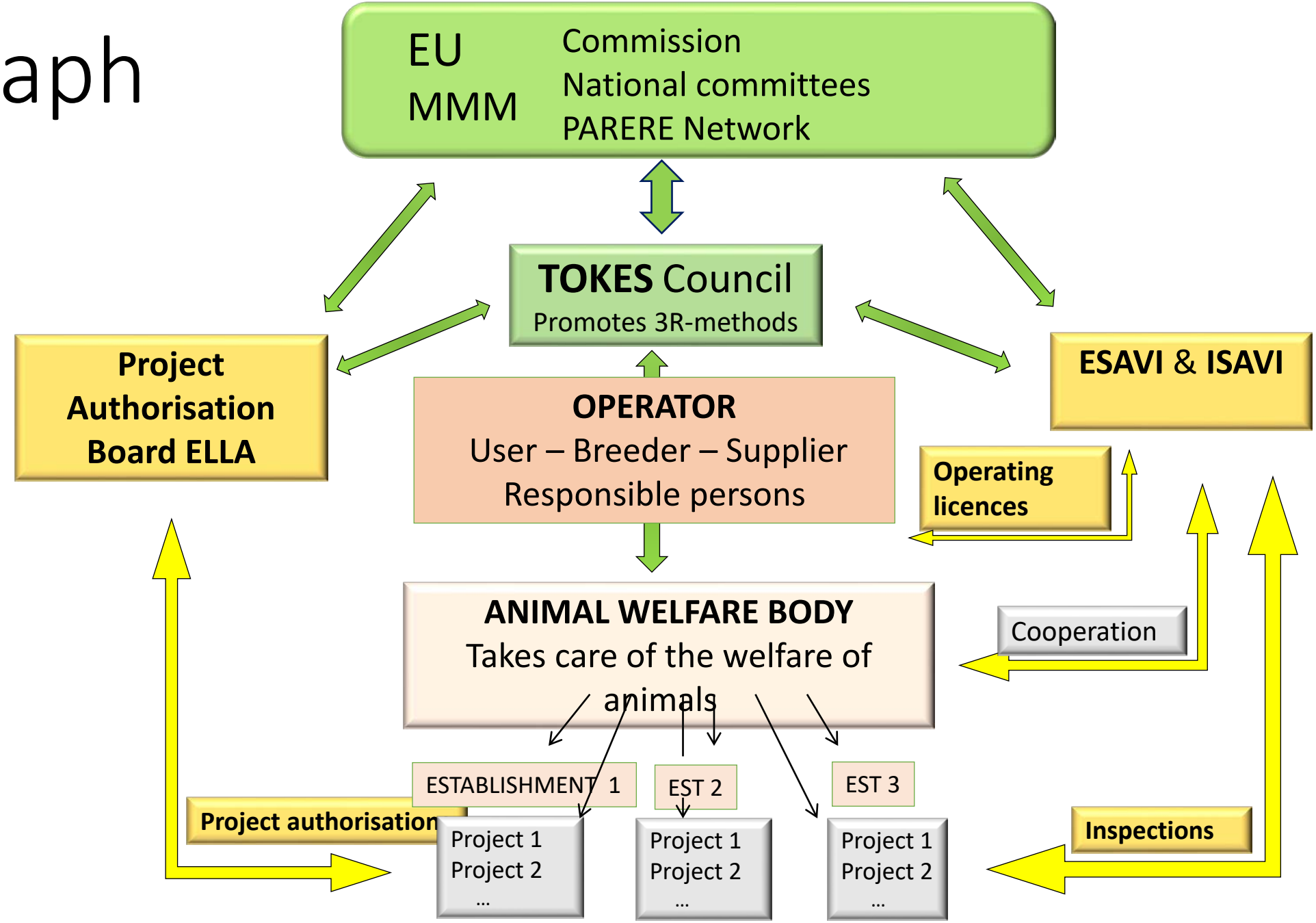
2. And carry out procedures on animals

Procedure=

- All kinds of animal use, which causes harm equivalent to or more than inserting a needle
- Also, creation of a gene modified (GM) line
- Also, maintenance of the GM line, if the genetic modification causes harm to animals that is equivalent to or more than inserting a needle

- **Exceptions:**
  - Euthanasia according to the Decree, customary breeding and care practices, marking of animals for identification, clinical veterinary practices, veterinary clinical trials

Graph


EU
MMM
Commission
National committees
PARERE Network
TOKES Council
Promotes 3R-methods
Project Authorisation Board ELLA
ESAVI & ISAVI
OPERATOR
User – Breeder – Supplier
Responsible persons
Operating licences
ANIMAL WELFARE BODY
Takes care of the welfare of animals
Cooperation
ESTABLISHMENT 1
EST 2
EST 3
Project authorisation
Project 1
Project 2
...
Project 1
Project 2
...
Project 1
Project 2
...
Inspections

Authorities (1/2)

- **Ministry of Agriculture and Forestry - MMM**
  - General steering and management & EU cooperation
- **Project Authorisation Board (ELLA)**
  - Project authorisation and amendments
- **Regional State Administrative Agencies for Southern and Eastern Finland:**

  Steering of operators
  - Authorisation of activities & supervision of compliance with the Act and project authorisation
  - ESAVI also acts on behalf of ISAVI

Authorities (2/2)

- **ESAVI (Regional State Administrative Agencies for Southern Finland)**
  - Presentation of project applications for ELLA
  - Minor amendments to project authorisations (time, animal numbers)
  - Non-technical summaries & retrospective assessments – published by the EU
  - Statistics and reporting of animal use
  - Recognition of project planner competence, when education is not completed in Finland

Committee and operators

- **TOKES**
  - **Council on the protection of animals used for scientific and educational purposes**
  - Promotion of 3R-methods
  - Cooperation with other European councils
- **Operators**
  - Research or education activities including animal use
  - **Responsible persons:** responsible for the activities, for an establishment, designated veterinarian, responsible for implementing a project
  - **Animal welfare body** follows activities and advises personnel

Operators, establishments and responsible persons (1/2)

- **Operator** = institute or company carrying out research including animal use
- **Establishment** = animal unit
  - Facilities, where animals are kept and/or used in projects (experiments)
  - One operator may have one or several establishments
- For example
  - University = operator
  - Animal units A and B = establishments of the university

Operators, establishments and responsible persons (2/2)

- **Responsible for the activity**
  - Requirements laid down for the activity are fulfilled
  - Personnel is competent
- **Designated veterinarian**
  - Veterinary care
- **Person responsible for the establishment**
  - Living conditions, care and use of animals according to law and authorisation
  - Advises personnel
  - Ensures that people working with animals are competent
- **Person responsible for the project implementation**
  - Projects done according to project authorisation and law
- **Animal Welfare Body** follows and advises
  - Promotion of 3R methods

Requirements for activities

- **Operating authorisation for the operator:**
  - Ensures appropriate activities
  - Procedures must be carried out in the establishment
- **Project authorisation for scientists:**
  - Ensures that 3R principles are implemented
  - The expected benefit is ethically justified considering the harm to the animals: harm-benefit assessment
- **Competence of persons**
  - Appropriate education and experience to work with living animals

3R principles must be followed

- Replacement – korvaaminen
  - Living animals are not used, if alternative method exists
- Reduction – vähentäminen
  - Number of the animals used is determined with statistical methods
  - Reuse possibilities
- Refinement – parantaminen
  - Procedures are performed with best practices
  - Continuous development of better living conditions and care routines

Only competent persons may work with living animals

A. Persons **performing procedures** on animals

  –Species & procedure-specific

B. Persons **designing** procedures and projects

  – Suitable academic degree + courses on animal experimentation

C. Persons **caring for** animals

D. Persons **killing** animals

Persons shall be supervised until they have demonstrated their competency. Continuous training required.

Operator (appointed person) ensures and evaluates competency

Adequate knowledge and skills depending on duties

- Legislation, ethics and 3Rs
- Species-specific needs, husbandry and care
- Genetics, biology, anatomy, behaviour
- Welfare, enrichment
- Health management and hygiene
- Design, species-specific procedures
- Pain, anesthesia, analgesia, humane end points, euthanasia

A person's previous qualification to plan projects and perform procedures is still valid (transition provision)

Procedure versus Project (1/2)

Procedure

- May be a single act
  - A single injection
- May be multiple acts with one defined purpose
  - Anesthesia + surgical implantation of a blood pressure transducer + following a suitable recovery period + administration of test substance + follow up the blood pressure + euthanasia of animals
  - All separate steps are needed to meet a single scientific purpose

Procedure versus Project (2/2)

Project

- **Procedures** are only performed in projects
- **A project** must be authorised: project authorisation (= authorisation for animal experiment)
- May include several subprojects and procedures
- **Other animal use**
  - For example: tissue sampling after euthanasia
  - Must be reported to operator:
    - Ensures that activities are appropriate & reports to ESAVI

Applying a project license (1/3)

- **Project Authorisation Board (ELLA)** evaluates and authorises projects
  - new projects and changes to project
  - License period in general 3 years, max 5 years
  - short continuing period or minor increase in the number of animals: ESAVI may authorise
  - **Non-technical project summary (NTS)** is published in EU database https://ec.europa.eu/environment/chemicals/lab_animals/alures_nts_en.htm

  before 2021 by ESAVI: https://avi.fi/tietoa-meista/tehtavamme/elaimet/koe-elaimet

Applying for project authorisation (2/3)

- **Evaluation of projects :**
  - **Prospective severity classification** of procedures
  - Check for **3R methods** & **harm-benefit assessment** → authorisation
- ELLA may require **retrospective assessment (RA)**
  - Stated in the authorisation
  - Always necessary if a project includes severe procedures
  - May be required for moderate procedures if there are special reasons

Applying a project license (3/3)

- Important things to clarify
  - Why necessary → grounds for project and expected benefits
  - 3R methods implemented: replacement, reduction, refinement
  - Refinement (parantaminen)
    - appropriate experimental techniques and good living environment
    - humane end points
    - harm caused to animals = severity assessment and classification

Project authorisation – responsibilities of scientists (1/2)

- **Project authorisation holder** – overall responsibility of the project
- **Person responsible for implementing the project**
  - Must be appointed in the application (operator and ESAVI must be notified of any changes)
  - Project is carried out according to the project authorisation and legislation
  - Persons performing procedures are competent
  - If needed, actions taken to correct shortcomings and records of this

Project authorisation – responsibilities of scientists (2/2)

- **Person responsible for implementing the project**
  - Continuous monitoring and recording of the welfare of individual animals during a procedure => actual severity classification after procedure
  - Records for retrospective assessment to ESAVI if required
  - Records for annual statistics
  - Medication given to animals for research purposes is recorded according to Decree 26§

Re-use of animals

- The animal is used in another procedure to meet a new defined purpose, when the procedure could also be performed on another animal
- Only if
  - The actual severity of the previous procedures was Mild or Moderate
  - The further procedure is classified as Mild, Moderate or Non-recovery
  - The animal's general state of health and well-being has been fully restored
  - It is in accordance with veterinary advice

Severity assessment and classification (1/2)

- **Before** the project: the applicant's estimation included in the application →
  ELLA assesses
- Animal numbers for each severity listed in the NTS and RA
- **Actual severity assessed for each animal at** the end of a procedure
- **Criteria** for classification given in the Directive's Annex VIII and Decree's Annex 3
  https://www.finlex.fi/fi/laki/kaannokset/2013/en20130564.pdf

Severity assessment and classification (2/2)

- **During the project**
  - Animal welfare must be monitored and recorded during the procedures → assessment and reporting of actual severity at the end of procedure: take into account all the steps of the procedure & harm caused by genotype
  - Guidance: https://ec.europa.eu/environment/chemicals/lab_animals/pdf/guidance/severity/en.pdf

Severity classification of procedures (1/3)

Non recovery

- Procedures performed entirely under general anesthesia from which animals shall not recover consciousness

Mild

- Animal is likely to experience short-term mild pain, suffering or distress
- Procedures with no significant impairment of well-being or general condition
- For example, pharmacokinetics, non-invasive imaging (MRI), ear or tail biopsies, IM-SC-IP-IG-IV administration, short term (<24h) restrain in metabolic cages

Severity classification of procedures(2/3)

Moderate

- Likely to experience short-term moderate or long-lasting mild pain, suffering or distress
- Procedures that likely cause moderate impairment of well-being or general condition
- For example, surgery under general anaesthesia with appropriate analgesia, withdrawal of food 48h in adult rats, acute dose-range finding studies, chronic toxicity tests without lethal end-points

Severity classification of procedures (3/3)

Severe

- Animal is likely to experience severe or long-lasting moderate pain, suffering or distress
- Procedures that likely cause severe impairment of well-being or general condition
- For example, tumours resulting in cachexia, surgery with severe/persistent moderate harm, multiple organ failure, genetical disorders with severe impairment of general condition (Huntington's disease, muscular dystrophy)

Not allowed *:* Procedures which involve severe pain, suffering or distress that is likely to be long-lasting and cannot be minimised

Retrospective assessment (RA) of project (1/2)

- In Finnish Takautuva arviointi (TA)
- Must be carried out by ESAVI if ELLA requires so in the authorisation
  - projects with severe procedures
  - projects with moderate procedures if there are special reasons
  - projects with non-human primates
- Data to ESAVI within 3 months of the end of the project
- ESAVI: evaluation and publication in the EU database and linked to non-technical summary in internet
- Info goes also to ELLA to help it in the evaluation of future projects

Retrospective assessment (RA) of project (2/2)

Project information submitted to ESAVI (if RA must be done):

1. Whether project objectives were achieved
2. Harm caused to animals
   - numbers and species used
   - actual severity of procedures
3. All elements that may enhance implementation of replacement, reduction and refinement

Annual statistics

- Animals used in procedures:
  - Species, number, severity classification, genotype, purpose and other information
- Animals not used in procedures: species, number, production or maintenance of a GM line
- ESAVI: https://avi.fi/tietoa-meista/tehtavamme/elaimet/koe-elaimet
- EU:https://ec.europa.eu/environment/chemicals/lab_animals/alures_en.htm

GMOs and GMMOs are controlled by the Board for Gene Technology and the Animal Unit

1. Gene modified animals GMOs

Researcher:

- Risk assessment of the use of GM-strains (normally class 1)
- GM-notification to animal unit, which keeps records of strains

2. Gene modified micro-organism GMMOs

Researcher:

- Risk assessment of micro-organism -> Board for Gene Technology
- Risk assessment when used in the animal unit
  - Info of risk assessment to the animal unit
  - Working instructions to the animal unit