



# GenTORE

## *Genomic management Tools to Optimise Resilience and Efficiency*

Grant agreement n°: 727213

**H2020 - Research and Innovation Action**

### **D7.1**

### **Project website on-line**

**Due date:** M1 (July 2017)

**Actual submission date:** M1 (July 2017)

**Project start date:** 1<sup>st</sup> June 2017      **Duration:** 60 months

**Workpackage concerned:** WP7

**Concerned workpackage leader:** Cagla Yuksel Kaya Kuyululu (EFFAB)

**Lead Beneficiary:** 7 - EFFAB

**Dissemination level:**

- PU:** Public (must be available on the website)
- CO:** Confidential, only for members of the consortium (including the Commission Services)
- CI:** Classified, as referred to in Commission Decision 2001/844/EC



### **Abstract**

The objective of the deliverable (under task 7.2) is to assure awareness of GenTORE and its activities on European cattle breeding among GenTORE stakeholders, end-users, general public and policy makers.

A key tool for assuring this awareness is the website which is an important information channel and a one-stop portal for GenTORE, a project with broad coverage in Europe.



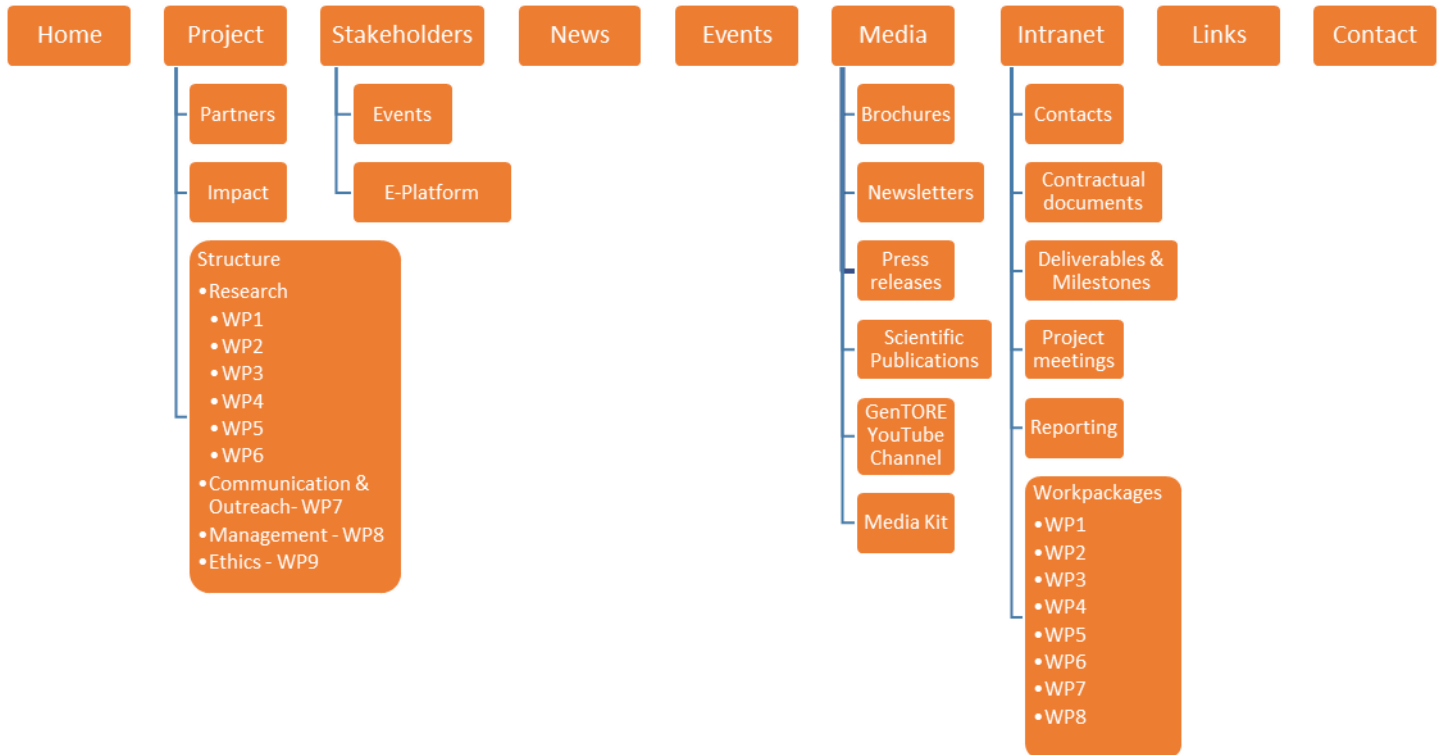
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## 1. Executive summary

<p><b>Background</b></p>	<p>The GenTORE website is a dynamic medium which will be adapted during the course of the project. News, events, media and project results will be added over time. The website is an important first contact point of the project with the target audiences. It should be informative, up-to-date, inspiring and inclusive, and invite visitors to further engage with the project.</p> <p>The project website is available on <a href="http://www.GenTORE.eu">http://www.GenTORE.eu</a></p> <p>The website is set up to cover the following content:</p> <ul style="list-style-type: none"> <li>- Project aim, objectives, structure, partners and impact</li> <li>- News items and press releases</li> <li>- Project media like brochures, newsletters, video materials</li> <li>- Agenda of important public events regarding the project</li> <li>- Description and contact details about partners and collaborators involved in the project</li> <li>- Links to scientific publications and presentations</li> <li>- Public project results</li> </ul> <p>Secure area for project partners and dedicated stakeholders</p>
<p><b>Objectives</b></p>	<p>To communicate up-to-date information on the project, the partners involved, the background of the project and on the project activities, the outcomes and the meaning of the outcomes.</p>
<p><b>Methods</b></p>	<p>A website is designed using the web-hosting service 'Weebly', with an online website creator. Information will be gathered from all the other workpackages.</p>
<p><b>Results &amp; implications</b></p>	<p>A GenTORE dedicated website that informs the project members, stakeholders and the wider public about project activities. It will serve as an important first contact point for the targeted audience.</p>

## 2. General outline of the website



### 3. Page details

#### 3.1 Homepage

Home page includes a brief overview of the whole project website. It shows the most recent updates to the website in different sections. It also includes subscription button to GenTORE mailing list.

The screenshot displays the GenTORE project homepage. At the top, there is a navigation menu with links for HOME, PROJECT, STAKEHOLDERS, NEWS, EVENTS, MEDIA, and CONTACT. The main banner features the GenTORE logo and the title "Precision Phenotyping for Efficient Animal Agriculture". Below the banner, there is a "SUBSCRIBE TO OUR MAILING LIST" button. The "News" section highlights "GenTORE started!" with a group photo of participants and a brief description of the kick-off meeting. The "GenTORE Flyer" section provides a visual overview of the project. The "GenTORE Stakeholder Survey" section includes a survey form and a "GenTORE Tweets" section with a "Tweets" button. The "Events" section lists several upcoming meetings and conferences, including the 5th Annual Meeting of European Federations of Animal Science, the 9th European Conference on Precision Livestock Farming, a Conference on Animal Genetics and Diseases, and a Networking Research and Innovation for FODD 2016. The footer contains the GenTORE logo, the European Union flag, and the text "GenTORE has received EU Commission funding under the FP7 (2007-2013) programme. GenTORE is funded by the European Union (EU) under the FP7 (2007-2013) programme. GenTORE is funded by the European Union (EU) under the FP7 (2007-2013) programme." and a "GenTORE" button.

### 3.2 Project

- Project page includes a brief overview of the project and it summarizes the GenTORE approach. It has 3 subpages; partners, impact and structure.



  
**GENTORE**

[HOME](#) **PROJECT** [STAKEHOLDERS](#) [NEWS](#) [EVENTS](#) [MEDIA](#) [CONTACT](#)

## *Genomic management Tools to Optimise Resilience and Efficiency*



The rate of resilience and efficiency determines the ability to adapt to changes. The need for resilient production systems is clear and increasingly urgent, and such systems include resilient animals.

In the context of livestock systems, the optimal trade-off between resilience and efficiency will differ according to the local production environment, i.e. tailored solutions to optimizing resilience and efficiency are needed.

**PROJECT**

- Partners
- Impact
- Structure

A recently started EU Horizon 2020 project called GenTORE ([www.gentore.eu](http://www.gentore.eu)) is tackling the issue of developing large-scale phenotyping of resilience and efficiency in both dairy and beef cattle.

**GenTORE Approach**

21 partners representing the diversity of the sector.

- Multi-disciplinary:** genomics, environmental assessment, nutritional physiology, health management, precision livestock farming, mathematical modelling & socio-economics.
- Multi-actor:** IIS, breeding industry, farm management and veterinary advisory services, farm technology companies, international organisations.
- Multi-regional:** Peco-climatic zones including Atlantic, Alpine, Continental, Mediterranean and Nemoral.
- Farming diversity:** Organic farming, intensive & extensive grazing, intensive indoors systems.





- Partners page gives the list of partners in the consortium with links to their websites.

- Impact page summarizes the expected outcomes of the project, in particular on the European beef and dairy cattle livestock sector.





- Structure page gives information on the project work plan and its workpackages.

**Gentore Structure**

Gentore is a five-year European project that is organised around 8 work packages with:

- 6 research work packages (WP)
- 1 outreach, dissemination and training WP and
- 1 management WP (see figure 1).

All 8 work packages will ensure that the critical aspects is fulfilled:

**WP1 - Production system metrics: Assessing the systems context (IR4)**  
Metrics for quantifying total production environments (development and applied) will be developed, using an holistic, enhanced information on the European scale, complemented by regional and local data collected by stakeholders and authorities. A multivariate combination of information will allow 'hotspot' risk factors' for R&E to be obtained, including local production environment, husbandry, unhealthability, and system flexibility.

**WP2 - R&E biology across growing and adult phases (IR4)**  
Animal-level data from experimental farms representing contrasting regions and different breeds will be used to develop proxies for residual feed intake as the main efficiency criterion across the stages. Validation and extension of the proxies will be performed in a multi-site multi-breed x environment experiment (with WP3). This will allow characterisation of the relations between R&E, and the environmental sensitivity of their correlations.

**WP3 - On-farm tools to phenotype proxies of R&E (DL4)**  
Tools will be developed using outputs from existing automated on-farm technology, big data available across farms in the cloud and national databases, and novel technology to phenotype animals in an outdoor free range environment (e.g. drone mounted cameras for weight estimation). These will be calibrated and validated across a range of production environments and systems for beef and milk.

**WP4 - Genomic indices for multi-breed selection in different environments (IL4)**  
Address the challenges of extending genomics from the major breeds (primarily Holsteins) to numerically smaller populations in terms of developing genomic methodology per se and by evaluating gains from innovative deployment of emerging techniques, including the genotyping of females using lower density genotypes platforms. Multi-breed and cross-breeding evaluation methods will be extended to allow full use of genomic variation within beef and dairy breeds, and crossbreeds. International data-sharing will give across-country genomic predictions for R&E. Existing data (national databases) from breeds that are present in multiple environments (e.g. Holstein, Charolais, Simmental) will be used with GE methods to account for the environmental context, and further refined with information from WPs 1, 2 and 3.

**WP5 - Geospatial management indexes: on-farm tools to optimising replacement strategies taking into account expected life-time R&E in dairy and beef cattle (IT4&DL4)**  
Integrate genomic information (GEBV) with available on-farm phenotypic information (WP2) to develop a management index ranking based on their predicted lifetime (including health and probability of pregnancy) and predicted performance, providing the farmer with a tool for breeding and culling decisions.

**WP6 - Modelling tools to predict outcomes of possible future scenarios (SR4)**  
Systems models will be developed that allow representation through time of the herd within a local production environment. Once evaluated (comparison with well-documented local production systems) these models will allow an end-user (farmer/advisor) to test the economic value and herd durability consequences of adjusting breeding and management strategies according to local production environments. Different farming systems will be assessed with regard to environmental, social and economic sustainability aspects in future scenarios, including consequences of climate change.

**WP7 - Outreach, dissemination and training (DF4&D)**  
The WP is focused on maintaining a maximal interaction with stakeholders through the organisation of regular workshops, conferences, farm visits, round table discussions, training sessions and the creation of a stakeholder platform. Activities like these will ensure stakeholder consultation on tool design, stakeholder feedback about the progress and potential directions of the Gentore research.

**WP8 - Project management and consortium coordination (IR4)**  
Create a project environment which maximizes interaction between partners and disciplines by using network management techniques including empowering young scientists in the project to be masters of collaboration, holding regular interface theme meetings distinct from the monthly business meetings. It will also oversee the building and management of data-sharing structures. In addition, using a governance structure designed for efficient functioning, the WP will carry out strategic management of the project, operational day-to-day management (monitoring of the project and risks assessment), administrative and financial management of the project.

**WP9 - Ethics requirements (IR4)**  
The work package sets out the 'ethics requirements' that the project must comply with.

**PROJECT**

- Features
- Layout
- Structure

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The work package sets out the 'ethics requirements' that the project must comply with.

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### 3.3 Stakeholders

Stakeholder page informs about the stakeholder inclusion and engagement strategy of Gentore. It will soon have two subpages; stakeholder events and E-platform for an interactive discussion. Website also allows joining to the stakeholder platform with a subscription button or via filling the embeded form.

**Gentore Stakeholders**

Gentore brings together:

- 1. multidisciplinary scientific expertise in genomics, environmental assessment, nutritional physiology, health management, precision livestock farming, mathematical modelling, and socio-economics;
- 2. partners and stakeholders representing breeding organisations, farm technology companies, farm and veterinary advisory services, and farm sectors (organic, grazing, etc.); and
- 3. a unique data basis including >1 million genotypes.

This multi-actor team will develop tools for:

- multi-breed selection for RSE;
- characterisation of diverse farm environments;
- large-scale phenotyping of RSE using on-farm technology;

on-farm management of breeding and culling decisions, and predicting the consequences for farm resilience of changing breeding and management.

These tools are designed to be applicable under commercial conditions at the end of the project. They will allow increased use of the genomic diversity in cattle breeds, e.g. use of selective cross-breeding to best exploit the local production environment. They will also allow farm managers, their advisors, and policy-makers, to assess the relative importance of breeding for animal resilience vs breeding for efficiency, with respect to system resilience.

As such Gentore will not only enable the use of genomic information to facilitate predictive biology of efficiency- and resilience-related traits, but will also increase resilience of livestock production in the face of current and future challenges of climate change and food security.

**Potential users**

The involvement of key stakeholders in the project will guarantee the relevance of the tools and create conditions for rapid uptake and deployment of them in the industry.

The tools will be made available to stakeholders as software prototypes with associated documentation (input/output specifications, description, validation statistics, etc.).

The primary target area for impact of Gentore outcomes is improving the sustainable competitiveness of the European bovine livestock sector. Sustainable competitiveness is a powerful lever for delivering better food security, lower environmental impacts, etc.

The Gentore genomic management and system evaluation tools will not only benefit the bovine breeding and farm management sectors, but will also impact the preservation and maintenance of a viable rural economy by contributing to farm resilience in diverse local production environments with local cattle breeds.

The direct end users of Gentore outcomes are:

- scientists from academic and industrial sectors who are potential users of the developed Gentore tools, algorithms and methods;
- companies involved in cattle breeding and/or precision farming based in Europe;
- companies providing technology (equipment, software);
- farm advisors (extension workers and veterinarians); and
- farm managers.

### Stakeholder engagement and inclusion



In addition to its multi-actor partners (level 1), Gentore will count on two more stakeholders levels:

- stakeholder level 2 includes stakeholders actively involved in the project (i.e., those who will be consulted during project orientation);
- stakeholder level 3 includes the stakeholders who will be the final users of the project results. These level 3 stakeholders include both policy makers and the relevant media.

Project partners and actively involved stakeholders (i.e., levels 1 and 2) will profit from working cohesively towards a more resilient and

efficient beef and dairy cattle production sector.

Involving the stakeholders at the start of Gentore and integrating them into the participatory research will benefit the quality and applicability of the project outcomes.

More diverse participating stakeholders generally lead to more ideas and perspectives which will ensure an approach with greater depth and breadth to sustainably improve resilience and efficiency in cattle.

The outcomes of Gentore will be more relevant to what is happening in daily practice on beef and dairy farms but also should be more user-friendly and be adopted rapidly and seamlessly by stakeholders.

### Stakeholders Platform (SP)

Stakeholders platform is an advisory body constituted of a group of persons and organisations representatives that express a stake or view at a certain moment of the project and are willing to share these with the project partners during stakeholder meetings and consultations. They will play a key role in the dissemination and exploitation activities of the project.

This group will have a flexible membership and will include representatives from all Gentore targeted audiences. The platform could be extended with additional stakeholders to have larger round table discussions.

Among the stakeholders platform members there are three degrees of implication.

The first level includes partners actively involved in Gentore WPs. A second level of stakeholders includes those actively involved and consulted, while the third level is constituted by the final users of the project results.

The stakeholders platform includes core groups from the L2, the stakeholders committee (SC) and the scientific advisory board (SAB).



Gentore is a Horizon 2020 project running from June 1st, 2017 to May 31st, 2022. This research received funding from the European Union's Horizon 2020 Research and Innovation Program under agreement No. 727213.



## 4. News and events

These pages are intended to inform about the project progress and events.



## 5. Media

This page aims to provide the different targeted audiences with the right dissemination material. It will cover all the publications whether technical, scientific or popular. Different media tools will be used during GenTORE project including informative brochures, newsletters, press releases, fact sheets, videos, webcasts, scientific publications, practice abstracts...



## 6. Contact

Contact page includes an online contact form and the contact information of the project coordinator, manager and outreach WP leader.



The screenshot shows the GenTORE website's contact page. At the top, there is a navigation menu with links for HOME, PROJECT, STAKEHOLDERS, NEWS, EVENTS, MEDIA, and CONTACT. The CONTACT link is highlighted. Below the navigation is the GenTORE logo. The main heading is "Contact". The form includes fields for Name (split into First and Last), Email, and a large text area for the Message. A SUBMIT button is located below the message field. At the bottom of the page, there are three columns of contact information: Project Coordinator (Nicolas Friggen, INRA AgroParis Tech), Project Manager (Agathe Renard, European Project Manager - INRA Transfert), and Communication & Dissemination (Çağla Yüksel Kaya Kuyulu, Project Manager - CFFAB). A footer section contains the European Union flag, a brief description of the GenTORE project, and another European Union flag.