Re-Livestock
Interviews – Web content

QUESTIONS FOR LUCA FONTANESI, WP CO-LEADER (PIGS), WP 3

WP3 – Re-Breeding livestock for resilience (Pigs)

-Introduce yourself, your professional background and your role within the Re-Livestock project

I am a full professor in Livestock Systems, Animal Breeding and Genetics at the Department of Agricultural and Food Sciences of the University of Bologna, Italy. My background is in Agricultural Sciences and then I got a PhD in Animal Sciences, with a focus in Animal Breeding and Genetics.

I co-lead WP3, in particular for the pig part of this WP.

-Describe Re-livestock in 1 sentence

Re-Livestock has the ambition to re-address some methodologies and applications in the European livestock industry to make it more resilient to climate change.

-A background explaining why breeding is important for increasing resilience

Animal breeding is the green engine that is essential to move forward all other components of the livestock production systems. Without a properly set up engine is not possible to take advantage from all other innovation: the can does not move.

You are testing animal breeding innovations for resilience. Could you describe them?

The innovation that we are testing is related to the way to dissect into intermediate phenotypes (or molecular phenotypes) more complex phenotypes (production traits and resilience) to close the gap between the genomic space and the phenotype space. Novel molecular phenotypes are produced to better describe resilience in pigs.

-What activities you have already carried out / you will carry out in your WP (very summarized and in a plain language, not excessively technical if possible; in case there are many things, you can select and say, for example…)

We have already completed the large cohort experimental designs able to link genetic markers in the pig genome with many molecular phenotypes (the level of hundreds of metabolites, that we can call metabotypes). This is the first step to understand the genetic mechanisms affecting the metabolism of the pigs and the differences in feed efficiency under hot stressing conditions.

-What will be the outcomes and results you expect to obtain from your WP? (these can be technical or other type of innovations, advance in methods and knowledge, recommendations for practices or policies, insights to what may happen in the future so as to guide policies…).

The expected innovations are essentially based on new knowledge that is produced, technical and methodological. We will dissect the pig genome to identify the regions involved in determining the level of many plasma metabolites. This list of information will be translated to develop novel methodologies to explain resilience of the pigs to heat stress using genomic and metabolomic combinations, that will lead to novel breeding applications.

-What do you think may be the main benefits of Re-Livestock for the sector and for society in general (linking to the WP challenge/s)

To obtain novel solution to breed for increased adaptations of the pig (in the case of WP3) to the effect of climate change. Pigs of the future will be adapted to the new expected climate scenario, reducing the negative effects on food security (for the part related to the availability of pigmeat).