



ROADMAP Newsletter

July 2022



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EDITORIAL

By Nicolas Fortané (INRAE), ROADMAP Project Coordinator

ROADMAP is arriving to the end of its third year and we are happy to see how all the work done starts to make sense! Many actions have been carried out in the different countries involved, following plans and protocols that have had to be constantly adapted to the changing and unpredictable situations of the last two years. But now that all the data from our case studies has been collected and our Living Labs have taken off, it is very satisfying to see everything we are able to better understand today, by putting together what we have collectively achieved.

The dynamics of AMU reduction in the various countries and production systems are related to different social, economic and cultural contexts, but some broad outlines are emerging. We can see how working conditions, farming systems, sector organisation and market structures impact on antibiotic use and, more broadly, on animal health and welfare. We also see how stakeholders can organise themselves to go beyond their particular interests and viewpoints to decide together on the changes to be implemented to achieve common objectives. Finally, we can identify some of the challenges that may need to be addressed in the future.

We still have a year to analyse all this data and draw up recommendations for everyone. We look forward to it!



NEWS

ROADMAP AT DISARM EVENT IN BRUSSELS

By Duru Eroglu (EFFAB)

ROADMAP joined DISARM's final meeting on 16 May 2022 at Copa Cogeca premises in Brussels. DISARM is a project composed of an active network of collaborating organisations including researchers, industry and farmers, dedicated to finding innovative solutions to antibiotic resistance.

The aim of this project has always been to promote the reduction of antibiotic resistance by reducing the need for antibiotic use in livestock farming, focusing on disease prevention and prudent use of antibiotics.



Photos by Jon Zurimendi (EFFAB)

During the event, ROADMAP organized a networking lunch before the event started, and the project coordinator Nicolas Fortané (INRAE) presented our project. ROADMAP SAB member and EFFAB director Ana Granados joined the panel discussion session and she said:

"Modern Animal Breeding has contributed and can continue to contribute to the reduction of the use of antibiotics in farmed animals".

With the lead of the DISARM project, a join project group was formed within Horiozn Results Booster to share key insights and questions relating to improved animal health, disease prevention, and reduced antibiotic requirements.

This project group is called ArMoR and involves projects as ROADMAP, DISARM, HealthyLivestock and AVANT. At DISARM's final event, ArMoR project group and its brand-new graphic materials such as the common logo were introduced. It was also announced that, ROADMAP would take over the DISARM's Community of Practice group on Facebook, to continue the legacy of DISARM after the project ends.

ANIMAL HEALTH & ANTIBIOTICS NETWORK ON FACEBOOK



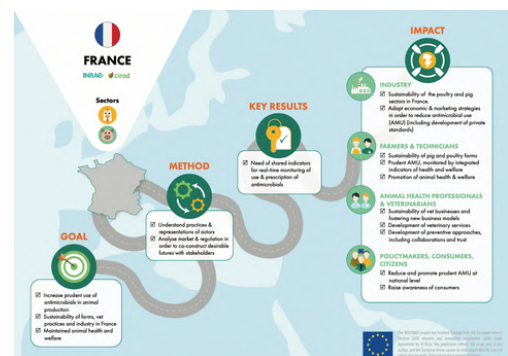
ROADMAP proudly takes over the DISARM project's Project Community of Practice group on Facebook, now with a new name: "Animal Health & Antibiotics Network". The name of the group might have been changed, but the aim stays the same. We will continue to grow this network to link together farmers, veterinarians, advisors, industry members and researchers to promote best practice strategies to reduce antibiotic resistance in livestock farming.

[Join us on our journey!](#)

INFOGRAPHICS ON CASE STUDIES

ROADMAP is organized in case studies that are taking place in 10 different countries (Sweden, Denmark, Netherlands, Belgium, UK, France, Switzerland, Italy, Vietnam, Mozambique) and 4 production sectors (pig, poultry, dairy and beef). The objective is to study a variety of contexts and production systems as we strongly believe that there is no "one-size-fits-all" solution or "one-way" transition to foster prudent AMU.

On the contrary, we want to develop tailored strategies that are efficient and acceptable in given situations, and we want to learn and draw inspiration from each experience to encourage global change that is pushing everyone towards the same direction, i.e. better agriculture and food systems for a better planet!



France Case Study

During ROADMAP's 3rd AGM, partners worked on creating message houses based on the results of their case studies. Each message houses will be designed as infographics for communication and dissemination purposes. The first infographics for the case studies based on pig and poultry sector in France is ready to [download on our website!](#) Other infographics will be uploaded soon, so keep an eye on our news!

NEWS

CONVEYING THE MESSAGE: BUILDING MESSAGE HOUSES ON THE LIVING LABS (LLS)

By Noraly van Hemert (EFFAB)

During the online 3rd ROADMAP AGM between 22-24 February 2022, WP 7 hosted an interactive workshop on building message houses. Message houses are an effective communication tool to create simple messages targeting different stakeholder groups.

The activity focused on providing an overview of the main objective and the activities of the case studies in each country: France, Denmark, Sweden, The Netherlands, the UK, Belgium, Italy, Switzerland, Vietnam and Mozambique. Each country was represented in a break-out room and participants and SAB members were assigned to the different rooms.

Each break out room worked on developing the main objective, a summary of their work and strategies, the core message and expected impacts and an overview of the deliverables, milestones and direct results from their respective LLs. After finalizing the different message houses in the break-out room all participants presented their results in the plenary room. The message houses provide an excellent overview of the work done in the different case studies.



Overview of the outcome of one of the message houses

ZENODO COMMUNITY

ROADMAP has now a community page on the Zenodo platform!

All scientific publications, communication and dissemination materials of the project are uploaded to the Zenodo platform on the community page "Rethinking the use of antimicrobials in livestock production systems". Zenodo helps researchers receive credit by making the research results citable and through OpenAIRE integrates them into existing reporting lines to funding agencies like the European Commission.

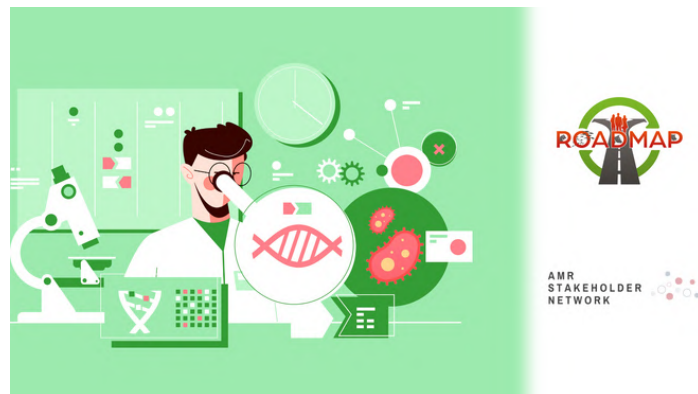
[Check ROADMAP's community page on Zenodo](#)

ROADMAP BECOMES A MEMBER OF AMR STAKEHOLDER NETWORK

By María Ramírez (EFFAB)

We are pleased to announce that the ROADMAP project has joined the AMR Stakeholder network. This organization brings together more than 60 leading organizations and individuals committed to tackling Antimicrobial Resistance (AMR) at the national, regional, and European levels, covering all dimensions of the 'One Health' approach from the World Health Organization.

The network aims to contribute to discussions on the cross-border health threat of AMR, build a consensus on the key EU priorities for tackling AMR, advocate for the EU to be a strong leader in Europe and beyond in the fight against AMR, and ultimately campaign for increased EU support and resources for members states to implement their AMR National Action Plans.



Graphics from Envato Elements edited by Jon Zurimendi (EFFAB)

ROADMAP's project coordinator Nicolas Fortané attended AMR Stakeholder Network's meeting on 18 January 2022 and he presented the ROADMAP project to AMR Stakeholder Network members:

"ROADMAP will contribute to the fight against AMR arising from farmed animal production and a global reduction of AMU and its impact on the environment, animal health, and public health".

We are delighted to be part of such a powerful network, and we look forward to working together with the Network to reach its objectives. For more information on the AMR stakeholder network visit: <https://epha.org/amr-stakeholder-network/>

NEWS

HORIZON RESULTS BOOSTER AND ARMOR PROJECT GROUP

By Duru Eroglu (EFFAB)

Supported by the European Commission, Horizon Results Booster (HRB) contributes to an effective transfer of research and innovation project results to policymakers, industry and society by offering various services such as dissemination, exploitation strategy and business plan development to projects.



ArMoR visual identity from its factsheet

Within the HRB programme DISARM, ROADMAP, AVANT and HealthyLivestock H2020 projects have taken the step towards forming a Project Group (PG) named "ArMoR-fighting Antimicrobial Resistance in livestock farming".

This project group is formed based on common features in these projects' activities and results in this research field. The projects in this group aim to develop a conceptual framework to improve the understanding of AMR in livestock systems. With HRB, this project group has created a portfolio of results that are suitable for joint dissemination.



ArMoR project group

Do you want to know more about this project group? Check our common ArMoR logo, video and factsheet [here](#).

QUALITATIVE RESEARCH WORKSHOP IN LEIDEN

By Nicolas Fortané (INRAE)

From 2 to 4 May 2022, the ROADMAP project members involved in WP2 met for a workshop in Leiden, The Netherlands. It was a real pleasure to meet in person after all this time having to meet on Zoom in a difficult context and not always convenient for collective work. Especially since the city of Leiden is absolutely charming, with its little windmill, its canals that crisscross the city and its famous botanical garden!



The city of Leiden, by Whom Graham-Wood (Getty Images)

The aim was to develop a collaborative analysis of the qualitative survey material collected in the different countries, based on interviews with farmers and veterinarians. Carrying out this exercise in a much more systematic way than we have had the opportunity to do so far has proved very rich! It is now clearer to what extent the social and economic dimensions of farming practices or antibiotic use transcend factors that are often mobilised without too much reflexivity, such as countries (and their specific regulatory systems) or animal species.



Partners at Leiden workshop – Photo taken by Duru Eroglu (EFFAB)

The highly intensive and industrialised sectors all have points in common (for example, the way in which integration contracts strongly constrain the decisions of the actors); the more marginal sectors (such as calf rearing) are weakened by their position on the agri-food markets. It seems that these are the structural dimensions on which there is still a lot of room for manoeuvre in order to promote the prudent use of antibiotics.

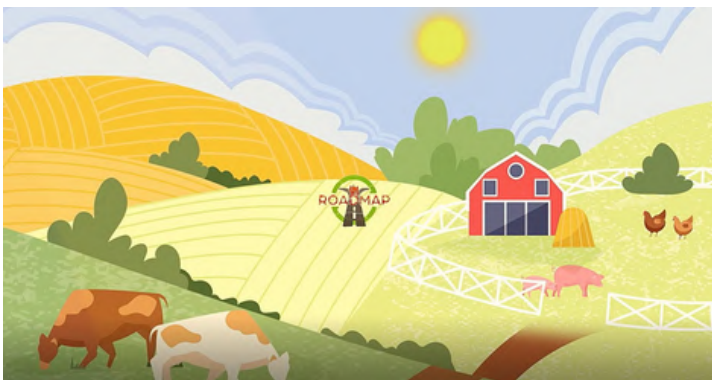
In any case, this workshop was the first of a long (hopefully!) series of face-to-face meetings that will allow us to refine the analysis of our socio-economic data, and to valorise it by the end of the project.

NEWS

ROADMAP ANIMATION MOVIE IS READY!

The new ROADMAP animation movie is ready to draw your attention on the importance of antimicrobial resistance, how ROADMAP supports prudent use of antimicrobials in livestock sector and ROADMAP's tailored solutions in case studies and living labs in 10 different countries in pig, poultry, dairy and veal production farms.

We will soon publish it in Italian, Spanish and French, so stay tuned to our YouTube Channel!



Snapshot of the ROADMAP animation

QUESTIONNAIRES FOR FARMERS AND VETERINARIANS

By Nicolas Fortané (INRAE)

An important focus of the ROADMAP project is to understand the practices of farmers and veterinarians in relation to antibiotic use, and animal health management in general. The aim was to move beyond motivational and opinion-based approaches to understand how working conditions, in a broad sense, might determine the ways in which antibiotics are prescribed and used, and strategies for reducing these uses.

We implemented qualitative interview surveys in several countries (to study different production systems and sectors), and quantitative questionnaire surveys were also deployed to see if our results were confirmed on a wider scale.

It has not been easy to obtain a satisfactory number of responses from a statistical point of view, especially from farmers for whom the last two years have sometimes been difficult.

We will probably have to accept that the results will not be fully exploitable in all cases, but overall we are confident that the data will be of interest, particularly when combined with what we have learned from the qualitative surveys.

The statistical analysis work is only just beginning, but the very first results from the French veterinary questionnaires show the extent to which working conditions (size and organisation of practices, contractual links to clients, types of sector, etc.) have the greatest impact on the ways in which antibiotics are used and the ways in which attempts are made to reduce them.

If all goes according to plan, we will have completed these analyses by the end of 2022 and will be able to share our findings in future newsletters!

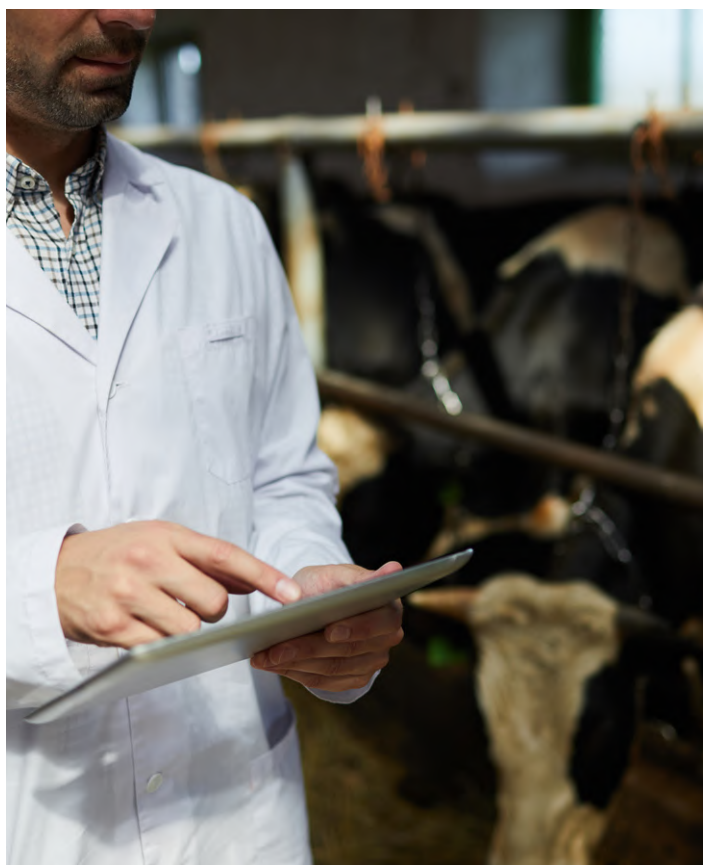


Photo by Syda Productions (Canva)

ARTICLES

COMPARISON OF ANTIBIOTIC USE IN TWO ITALIAN PIG PRODUCTION CHAINS DIFFERING BY THE ENDEMIC STATUS FOR THE PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME

By Paolo Trevisi, Laura Amatucci, Roberta Ruggeri, Costanza Romanelli, Giampietro Sandri, Diana Luise, Massimo Canali and Paolo Bosi (UNIBO)

The aim of this study was to compare the antibiotic use in Italian weaning and fattening pig farms differentiated for the occurrence of the porcine reproductive and respiratory syndrome (PRRS), a virosis causing reproductive failures (abortions, weak and stillborn piglets, infertility), pneumonia and increased mortality in young animals, and leading to relevant economic losses to pig farmer and the whole society globally.

All the farms involved in the study were treated with the modified live PRRS virus vaccine and were classified PRRS negative (-) or PRRS positive (+) based on the pathogen's circulation within the farm: in PRRS- farms the level of PRRS virus antibodies in animals was low and the disease did not occur in clinical form, while in PRRS+ farms antibody levels were high, and the disease was recurrent.



Photo by JackF (Getty Images)

Data on the antibiotic consumption (in mg of active principle per kg of pig liveweight produced) between the years 2017 and 2020 of 116 thousand weaners and 108 thousand fattening pigs from PRRS- farms, and 65 thousand weaners and 54 thousand fattening pigs from PRRS+ farms were collected.

The active principles were classified according to the EMA classification for prudent and responsible use of antibiotics in animals, i.e.: Avoid (class A), Restrict (class B), Caution (class C), and Prudence (class D). The data of each antibiotic category were analyzed using a linear model that included production phase, PRRS status, and their interaction as factors.



Photo by Rat0007 (Getty Images)

Performance parameters, average age of the pigs at the end of each phase, daily live weight gain, feed-to-gain ratio, total losses, cost index, and medication costs were significantly influenced by PRRS occurrence. The use of class B antibiotics was not affected by the production phase or the PRRS status.

Conversely, for class C, interaction between the two factors was observed: weaning PRRS+ and fattening PRRS+ showed the greatest use of antibiotics of this class. For the class D antibiotics, the interaction was also significant: antibiotics of classes C and D were used more in the weaning than in the fattening phase. For the weaning phase, the use of antibiotics of classes C and D was greater in the PRRS+ than in the PRRS- chains. In conclusion, PRRS status affected the growth of pigs and economic performance.

Moreover, PRRS status significantly influenced the use of antibiotics during all the growing periods with the greatest impact being on the weaning phase.

[Read the full article](#)

MEET ROADMAP

ROADMAP Pillar 1 Team



Massimo Canali
University of Bologna

Massimo Canali (PhD Agricultural Economics) is associate professor at the University of Bologna teaching agricultural and environmental economics. His research is concerned with sustainable development of agriculture and food systems focusing on animal and environmental health economics and One-Health. He worked in international research and development projects for the EU Commission, the EU Parliament, the FAO, the Int. Atomic Energy Agency, and the Italian Ministry of Foreign Affairs. In ROADMAP, Massimo is the leader of WP1 "Analysing stakeholders' behaviours within the AM decision-system and identifying sociotechnical lock-ins and priorities for actions towards a more responsible AMU" and he is the coordinator of Italian pig and poultry LLs.



Lee-Ann Sutherland
James Hutton Institute

Prof Lee-Ann Sutherland is Director of the James Hutton Institute's flagship, the International Land Use Study Centre. Raised on a family farm in Canada, she is an interdisciplinary social scientist with a background European agrarian development, human-environment relations, and farm-level decision-making. She is perhaps best known for her work in developing the 'Triggering Change' model of farmer decision-making and her research on non-commercial farming and computer games. Lee-Ann coordinated the FP7 FarmPath project and H2020 PLAID project. She leads the Hutton team in EPIC: Scottish Government's centre of Expertise in Livestock Disease Risk. Her recent research includes studies of 'horsification' and biosecurity issues associated with backyard poultry production. Lee-Ann also conducts research into social justice issues in agriculture, particularly relating to gender and new entrants. Within ROADMAP, Lee-Ann co-leads WP2 "Understanding actors' motivations towards antimicrobial use at farm level" with Gareth Enticott.



Erwin Wauters
ILVO – Flemish
Research Institute for
Agriculture, Fisheries
and Food

Erwin Wauters has a Bachelor in Bioscience Engineering, a Master (2002) and PhD (2010) in Agricultural Economics, all from the Katholieke Universiteit Leuven. Until 2007, he worked as research assistant at the Division of Agricultural and Food Economics of the same university. Since 2008, he is senior researcher at the Social Sciences Unit of the Flanders research institute for agriculture, fisheries and food. There, he coordinates national and international research projects on the economic, institutional and social aspects of farming and food systems. He focuses on understanding the economic, institutional and social drivers that shape our farming and food systems, and how to create a more enabling environment that fosters more sustainable farming and food systems. One of his research themes is Social Veterinary Epidemiology and Economics of Animal Health. In this respect, he supervises studies on behavioural aspects of animal health and on the economic drivers and consequences of different modes of animal health management. Currently he coordinates a Horizon 2020 Thematic Network on Disseminating Innovative Solutions for Antimicrobial Resistance Management (DISARM) and is in the core group of 2 Horizon 2020 projects on AMU and AMR.

For several years, he was also Professor Economic of livestock production and health at the Faculty of Veterinary Sciences of Antwerp University. He is board member of the Flemish Society for Veterinary Epidemiology and Economics (VEE) and board member of the International Society of Economic and Social Sciences on Animal Health (ISESSAH).



Gareth Enticott
Cardiff University

Gareth Enticott is a Reader in Human Geography in the School of Geography and Planning. His research focuses on biosecurity, and scientific controversies in animal health. His main focus is on the ongoing controversy surrounding bovine Tuberculosis in the UK, as well as the management of the disease in New Zealand. His work has helped inform policy on bovine Tuberculosis in England and Wales. In the ROADMAP project, he is the deputy leader of WP2 "Understanding actors' motivations towards antimicrobial use at farm level" and he is the LL Coordinator on UK calves".

MEET ROADMAP

ROADMAP Pillar 1 Team



Caetano Luiz Beber
University of Bologna

Caetano is an agricultural economist and postdoc researcher at University of Bologna and works in the Italian pig and poultry LLs in the ROADMAP project. Previously he worked as Postdoc and Lecturer at Georg-August-Universität Göttingen in the master course "Organization of Food Supply Chains" offered to the M.Sc. course of "Sustainable International Agriculture". He has a PhD in Agricultural Economics and Rural Development at Georg-August-Universität Göttingen, with a thesis focused on the Development of Agrifood Supply Chains in an emerging economy, emphasizing the Cooperative business forms. He holds a master's degree on "Economics of Agricultural Development, Environment and Food EcoDEVA" by Montpellier SupAgro / IAMM-CIHEAM / Université de Montpellier. He is also an agronomist engineer by the Federal University of Santa Catarina.



Fanny Baudoin
ILVO – Flemish
Research Institute for
Agriculture, Fisheries
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Fanny Baudoin, master in Molecular and Cellular life sciences, is a PhD student at ILVO (Flemish Research Institute for Agriculture, Fisheries and Food), Department of Social Sciences and Wageningen University and Research. For her thesis, she analyses the systemic factors (i.e. social, economic, institutional, ...) that influence farmers' and veterinarians', but also other stakeholders', behavior with regard to antimicrobial use. She is mainly interested in better understanding the systemic barriers that may prevent stakeholders from adapting their behaviour. In ROADMAP, Fanny is supporting Pillar 1 and WP1, which aims to understand whether actors have the capacity to innovate (fast enough) to reduce their AMU, and this given their specific context. This specific context is determined by the policies, rules, habits that are taken for granted, power-relations between the actors, available tools and services, ... specific to a case study.

VIDEOS

Click on the images below to watch new interviews and recordings of presentations from recent events and meetings! You may subscribe to [ROADMAP H2020](#) on YouTube to receive notifications when a new video is published.

The videos are also available on the ROADMAP website under '[MEDIA - ROADMAP YouTube Channel](#)'.



ROADMAP Animation Video
Also available in French [here](#)



ArMoR Project Group Video

PUBLICATIONS

Here are the recent publications and articles relevant with the ROADMAP project:

- Butcher, A., Cañada, J.A. & Sariola, S.
How to make noncoherent problems more productive: Towards an AMR management plan for low resource livestock sectors, Humanit Soc Sci Commun 8, 287 (2021).

- Hughes A, Roe E, Hocknell S.
Food supply chains and the antimicrobial resistance challenge: On the framing, accomplishments and limitations of corporate responsibility, Environment and Planning A: Economy and Space. 2021;53(6):1373-1390.

Remember that you can check all ROADMAP's publications now on Zenodo!

[Check ROADMAP's Zenodo Community](#)



Photo by Shironosov (Getty Images)

EVENTS

Below is the list of the upcoming international conferences and events:



16th International Symposium of Veterinary Epidemiology and Economics
7-12 August 2022, Halifax, Canada



73rd Annual Meeting of EAAP
5-9 September, Porto, Portugal



World ONE Health Congress
7-11 November, Singapore

CONTACT

For more information about the ROADMAP project, visit our website and follow us on our social media accounts!



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