

ROADMAP

Rethinking of antimicrobial decision-systems in the management of animal production

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D7.4 First batch of practice abstract for end-users

Duru Eroglu van der Schoor¹

¹ EFFAB, The Netherlands

* Deliverable leader – Contact: duru.eroglu@effab.info

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About the ROADMAP research project

The overall aim of ROADMAP is to **foster transitions towards prudent use of antimicrobials (AMs) in animal production in different contexts to manage antimicrobial resistance (AMR). Prudent antimicrobial use (AMU) will be achieved by enhancing antimicrobial decision-systems along the food and drug supply chains.** ROADMAP will focus on supporting animal health and welfare through prevention and health promotion actions.

AMR is recognized as a significant threat to global public health and food security. Overuse and improper use of AMs in many parts of the world contribute to the emergence and spread of AMR. Although human and animal health require AMs, it has been estimated that two thirds of the future AMU growth worldwide will be in animal production. Improving the management of AMU in farm animals is therefore a critical component of dealing with AMR and optimizing production in the livestock sector. Nevertheless, the variety of contexts of AMU in the livestock sector is a major challenge to managing AMR. **There is no “one-size-fits-all” solution to improve AMU and strategies must be contextually developed** (for instance, strategies used in the Danish pig industry are difficult to adapt and adopt in the French free-range poultry farming). Successful solutions must be combined and tailored to the production systems and the social and economic context in which they operate.

ROADMAP will meet three general objectives, in line with the EU AMR Action plan: i) **Rethink AM decision-systems and animal health management;** ii) **Develop options for encouraging prudent AMU in animal production;** iii) **Engage all actors in the food and drug supply chains in fostering a more prudent use of AMs.**

Project consortium

Part. N°	Participant organisation name (acronym)	Country
1	Institut National de Recherche pour l’Agriculture, l’Alimentation et l’Environnement (INRAE) **	France
2	Association de coordination technique agricole (ACTA) ***	France
3	Centre de coopération internationale en recherche agronomique pour le développement (CIRAD) **	France
4	University of Liverpool (ULIV) *	United Kingdom
5	Cardiff University (CU) *	United Kingdom
6	James Hutton Institute (HUT) **	United Kingdom
7	Alma Mater Studiorum - Università di Bologna (UNIBO) *	Italy
8	Aarhus Universitet (AU) *	Denmark
9	Eigen Vermogen van het Instituut voor Landbouw en Visserijonderzoek (EV-ILVO) **	Belgium
10	Research Institute of Organic Agriculture (FiBL) **	Switzerland
11	Stichting Wageningen Research (WR) *	Netherlands
12	Swedish University of Agricultural Sciences (SLU) *	Sweden
13	Southern Agriculture and Horticulture Organization (ZLTO) ***	Netherlands
14	European Forum of Farm Animal Breeders (EFFAB) ****	Netherlands
15	Fundacion Empresa Universidad Gallega (FEUGA) ****	Spain
16	Dierengezondheidszorg Vlaanderen (DGZ) ***	Belgium
17	INRAE Transfert (IT) ****	France

* Universities/veterinary schools

** Research institutes specialized in both fundamental and applied agricultural and veterinary sciences

*** Public and private advisory services Organisations

**** Knowledge transfer and Innovation organisations

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List of acronyms and abbreviations

Abbreviation	Description
AMR	Antimicrobial Resistance
AMs	Antimicrobials
AMU	Antimicrobial use
CIRAD	Centre de cooperation internationale en recherche agronomique pour le développement
D	Deliverable
DoA	Description of Action
EC	European Commission
EFFAB	European Forum of Farm Animal Breeders
EIP-AGRI	The Agricultural European Innovation Partnership
EU	European Union
FEUGA	Fundacion empresa Universidad Gallega
GMO	Genetically modified organisms
IFIP	Institut du Porc
INRAE	Institut national de la recherche agronomique
IT	INRAE Transfert
ITAVI	Institut Technique de l'Aviculture
MS	Milestone
NAP-AMR	National Action Plan on Antimicrobial Resistance
SMA	Stakeholders Mapping and Analysis
UMR - ASTRE	Unité Mixte de Recherche – Animal Sante Territoires Risques Ecosystemes
UNIBO	Alma Mater Studiorum – Università di Bologna
WP	Work Package

Summary

As ROADMAP project has a multi-actor perspective to engage with animal health professionals, stakeholders and policy-makers, it is important to reach out to these stakeholders, end-users and target groups by delivering the project results through various dissemination materials such as practice abstracts. Practice abstracts in the common EIP format will feed into the European Innovation Partnership (EIP) 'Agricultural Productivity and Sustainability' for broad dissemination and they will facilitate the knowledge flow and enable contacting farmers, researchers and all other actors involved in the project. Practice abstracts describe the main information/recommendation/practice to serve the end-users in their daily practice.

D7.4 consists of the first batch of the practice abstracts that have been submitted by the WPLs and CSLs from Italy (UNIBO), France (IFIP and ITAVI), Mozambique (CIRAD and University Eduardo Mondlane) and Vietnam (CIRAD – UMR ASTRE). This first batch includes 5 practice abstracts following the EIP AGRI format: short summary and background, available project results/outcomes, expected impacts and practical recommendations.

Introduction

In the Description of Action (DoA), under WP7 in "Task T7.3. Dissemination of project results", it is indicated that during the whole course of the project, at least ten "practice abstracts" will be delivered in the common EIP format to feed into the European Innovation Partnership (EIP) 'Agricultural Productivity and Sustainability' for broad dissemination.

The EIP-AGRI common format facilitates knowledge flows on H2020 projects from the start until the end of the project. The use of this format also enables farmers, advisers, researchers and all other actors across the EU to contact each other. Operational Groups are regional or national practice-oriented innovation projects supported by rural development programmes under the Common Agricultural Policy. The EIP-AGRI helps these projects to work in synergy with other interactive innovation projects under Horizon 2020. The practice abstracts are provided in the common EIP format in Annex 1.

In addition to EIP Common format, a ROADMAP common template is prepared for practice abstracts to be published at the end of the project in the form of a booklet. ROADMAP project's template for practice abstracts is provided in Annex 2.

2.1 Objectives

Practice abstracts describe the main information/recommendation/practice to serve the end-users in their daily practice. These end-users include animal health professionals, farm managers/advisors, farmers, breeding and feeding companies, pharmaceuticals, farmers and veterinarians. According to the Dissemination Strategy of ROADMAP provided in the [Deliverable 7.3 "Plan for the Exploitation and Dissemination of Results"](#), practice abstracts will contribute to the below expected impacts of the project:

- Develop options for reducing the use of antimicrobials (AMs) in farming,

- Provide roadmaps and scenarios for transition towards prudent use, enhance capacities of farmers for innovation and antimicrobial use (AMU) change,
- Provide new tools for preventive approach of animal health, and new professional and business models for veterinary practices.

With regard to the DoA, practice abstracts will also contribute to the expected impacts on target audiences such as farmers in order to provide roadmaps and scenarios for transition towards prudent use, enhance capacities of farmers for innovation and AMU change. Practice abstracts will also provide suggestions and recommendations on providing new tools for preventive approach of animal health, and new professional and business models for veterinary practices, and this will have an impact for veterinarians. For all actors, practice abstracts will also have an impact on raising awareness of animal health professionals and stakeholders, and large end-user community.

2.2. Method

Regarding the preparation of the practice abstracts, WPLs, CSLs and partners have been provided detailed information on the aim and outline of the practice abstracts at various occasions such as ExCom meetings and through email correspondence. Based on the common EIP AGRI format, partners were informed that, practice abstracts should be as valuable as possible for farmers/end-users, using a direct and easy understandable language and pointing out entrepreneurial elements which are particularly relevant for practitioners (e.g. related to cost, productivity etc). Research oriented aspects which do not help the understanding of the practice itself should be avoided. It was also pointed out that, practice abstracts should contain the following information:

- Main results/outcomes of the activity (expected or final)
- The main practical recommendation(s): what would be the main added value/benefit/opportunities to the end-user if the generated knowledge is implemented? How can the practitioner make use of the results?

As some of the surveys and interviews in the project research have not been fully completed, some of the practice abstracts include expected outcomes and impacts of the study. Partners were also encouraged to translate the practice abstracts into their own language to reach out to a wider, local stakeholder community.

For the first batch, WPLs and CSLs from Italy, France, Mozambique and Vietnam have provided 5 practice abstracts. After receiving each practice abstract, EFFAB reviewed the content and evaluated them according to the EIP AGRI format by making suggestions and edits. Then, the revised versions of the practice abstracts were shared with the Coordination and management team (INRAE and INRAE Transfert) and the exploitation manager (FEUGA) of the project to receive final comments. When the text of the practice abstract was finalized, the content was copied into the design that was created by EFFAB. The finalized practice abstracts were shared under the “Other Publications” section in the ROADMAP Collaborative Platform 10 days before they were published on the project’s website.

Practice Abstracts

For the first batch, in total 5 practice abstracts were received by CSLs and WPLs from Italy (UNIBO), France (IFIP and ITAVI), Mozambique (CIRAD and University Eduardo Mondlane) and Vietnam (CIRAD – UMR ASTRE). The practice abstracts are shared on ROADMAP’s website and will be shared on social media channels. The summary of each practice abstract is provided below.

3.1 Practice abstract: “Antibiotic-free labelled poultry meat” - UNIBO

3.1.1 Summary

According to European statistics, Italy is in the group of EU countries with the highest antimicrobials use (AMU) in livestock farming and this may increase the risks to spread pathogens developing antimicrobial-resistance (AMR) in the environment and along the agri-food supply chain. This study’s aim is to identify the premium price that Italian consumers are willing to pay for poultry meat produced without the use of antibiotics. The survey results indicate that Italian consumers are willing to pay 14.6% more for broiler breast produced without the use of antibiotics and with improved animal welfare standards with respect to similar products not claiming these characteristics. The practice abstract also includes practical recommendations such as the importance of applying antibiotic-free labels and also provides on-farm application for producers, processing companies, retailers, farmers and veterinarians.

The practice abstract could be found on the [website](#).

Antibiotic-free labelled poultry meat
How much more are the Italian consumers willing to pay for poultry meat produced without the use of antibiotics?

Problem
According to European statistics, Italy is in the group of EU countries with the highest antimicrobials use (AMU) in livestock farming and this may increase the risks to spread pathogens developing antimicrobial-resistance (AMR) in the environment and along the agri-food supply chain. However, in the country, public institutions and private operators are taking actions to improve this situation and relevant changes are happening. One example comes from the poultry industry that achieved important advancements in farms’ animal welfare and biosecurity and scaled up production of labelled antibiotic-free meat and eggs by obtaining more than 80% reduction in AMU. But, how much more are the Italian consumers willing to pay for chicken meat produced without the use of antibiotics?

Background
In Italy, since 2016, the main supermarket chains have been proposing lines of animal products obtained without or with a reduced use of antibiotics in farms, which recorded a 203% increase in sales between 2017 and 2019. In the poultry meat market, about 40% of total sales are certified production obtained without using antibiotics (2020 estimations). Health institutions, policy makers and private stakeholders encourage the initiatives for a more prudent use. Even if retailers are increasingly requiring antibiotic-free products for their supply chains actors, AMU in livestock animals continue at high levels in Italy.

Solution
In order to identify the premium price that consumers are willing to pay for meat produced without antibiotics, a hedonic price model¹ was developed. The data collection was carried out through the direct observation of the sample units (poultry breast packed in trays) in supermarkets of Forlì, Bologna, Casena and surroundings. 173 product observations led to identify 75 product attributes. Such attributes were grouped into 14 variables used in the final model. The validity of these variables in defining prices was discussed with quality and marketing staff of two large poultry integrators: Amadori and Guidi, two of the large poultry companies in Italy.

Author(s)
Massimo Canali, Enrico Sbaragli, Maurizio Aragrande, Caetano Luiz Beber, Sara Capacci
Università di Bologna
Contact email: massimo.canali2@unibo.it

Publication
“Consumers’ Willingness to Pay for Meat Produced Without Using Antibiotics: A Hedonic Price Analysis in Italian Supermarkets” World One Health Congress 2020

Additional resources
<https://worldonehealthcongress.org/>

Keywords
Antibiotic-free label, hedonic prices, Italian consumers, poultry meat, antimicrobial use, antimicrobial resistance

Images

Data on prices and marketing characteristics of broiler breast were collected in supermarkets of three towns in Northern Italy.

Outcome
The study results indicate that, Italian consumers are willing to pay 14.6% more for broiler breast produced without the use of antibiotics and with improved animal welfare standards with respect to similar products not claiming these characteristics. The attribute that has the most positive effect on the price is, the “Organic” label with an average increase of 66.4% with respect to non-organic products.

Practical recommendations

- Antibiotic-free labels are an important tool to inform consumers and promote AMU reduction;
- It would be useful to verify the level of consumers’ awareness regarding the possibility to use antibiotics in organic animal production;
- Initiatives to improve consumers’ awareness regarding the use of antibiotics in livestock production and the measures that guarantee traceability of AMU and absence of residuals in all marketed products would support conscious and informed purchases.

On-farm application

- Producers, processing companies and retailers should promote antibiotic-free supply chains, since consumers appreciate this product characteristic;
- Veterinarians and public health operators should motivate a more prudent use of antimicrobials in animal production and increase awareness of farmers and supply chain operators regarding AMR risks;
- Technical assistance for farmers is necessary for guidance and promotion of improvements in animal welfare and biosecurity;
- Incentives to farm investments would support and enable such changes.

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¹ The concept of Hedonic Price is based on the hypothesis that one good incorporates different qualities or attributes and its price, in a perfect competition market, depends on the willingness to pay of consumers for such attributes. On this assumption, for example, if we compare the prices of two goods that are identical except for one attribute, the price difference between the two goods expresses the willingness to pay of consumers for the attribute.

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Figure 1 Practice abstract - Antibiotic-free labelled poultry meat

3.2 Practice abstract: “Antibiotic free labels in the French pig industry” - IFIP

3.2.1 Summary

Since the early 2010s, stakeholders of the French pig industry have developed AB free private standards to meet market demand, provide financial support and communicate on the efforts made by farmers. Within the ROADMAP project, an analysis of the AB free supply chains in the French pig sector has been conducted. This practice abstract provides the results of the survey and also gives practical recommendations such as the need to simplify the multiple claims for a better understanding by the consumer and to provide more freedom to pig producers, that could be achieved by promoting a legal definition of the “AB free” claim like "GMO free" and simplifying the pork market segmentation.

The practice abstract could be found on the [website](#).

PRACTICE ABSTRACT

Antibiotic free labels in the French pig industry:
To reduce antibiotic use, to raise awareness and to remunerate

Context and Background
 Antibiotic resistance has been a major public health problem and a growing societal concern since the early 2000s. This has led to decisions and regulations at the European Union level (recently the new Veterinary Medicines Regulation 2019/6 and the Farm to Fork Strategy), and to the French national action plan Ecoantibio which set targets for reducing antibiotics (AB) use in veterinary medicine (-25% between 2012-2016).

Solution
 Since the early 2010s, stakeholders of the French pig industry have developed AB free private standards to meet market demand, provide financial support and communicate on the efforts made by farmers. Within the ROADMAP project, we conducted an analysis of the AB free supply chains in the French pig sector (representing about 15% of French pig production). The analysis was based on the inventory and synthesis of the existing literature and 7 semi-directive interviews were carried out with 5 producers' organizations, 1 meat processor and 1 retailer. A part of the interview was devoted to the description of the AB free scheme of the company. In addition, interviews were conducted with 18 breeders to understand their motivation towards AB use and AB free labels.

Outcome
 The AB free claim in France has been always included in a more global valorization approach including GMO free, welfare, social and environmental criteria. According to the survey results:

- In the absence of a collective scheme, private specifications have multiplied in pig sector, as a way to differentiate from competitors and to avoid "name and shame". Today, each retailer or meat processor has its own AB free line (see photos). The demand identified by the processors and retailers is mainly for cooked ham, which complicates the valorization of the whole carcass.
- The specifications are scalable. For the ban of antibiotics, the claim is moving from "from 42 days (two or three weeks after the weaning)" to "from birth".
- Once there is compromise between the cooperatives and their clients on requirements, additional costs and bonus, the cooperatives offer some of their members that use less antibiotics to join the line. The lines with the highest volumes are "Bien élevés" from the Cooperi (350 farms, 3 million pigs produced without antibiotics, including 1 million since birth), "La Nouvelle Agriculture" from the Terrena cooperative (60 farms, 200,000 pigs) and "Engagé dans l'élevage" from the Avril cooperative with the Fleury-Michon processor (40-50 farms, 100,000 pigs).
- The farmer perceives a bonus of a variable amount depending on the constraints (about 5 €/pig). The treated pigs (tattooed and ear-tagged to be separated at slaughter) may or not benefit from the added value depending on the line. The bonus rewards farmers for their changes in practices and investments regarding biosecurity, vaccination, alternative products, monitoring, identification, etc.

Authors
 Christine Roguet and Anne Hémonic, ifip-institut_du_porc
 Contact email: christine.roguet@ifip.asso.fr

Keywords
 AMU, AMR, antibiotic-free label, public health, pig industry, antibiotic use

Images
 Each retailer or meat processor has its "Antibiotic-free" specifications

Practical recommendations
 There is a need to simplify the multiple claims for a better understanding by the consumer and to provide more freedom to pig producers. This could be achieved by:

- promoting a legal definition of the "AB free" claim like "GMO free" and,
- simplifying the pork market segmentation into four classes: - standard (VFF-QT, including entry level of some claims), Product Conformity Certificate (premium level of harmonized claims about welfare, AB, GMO...), Label Rouge and organic.

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Figure 2 Practice abstract - Antibiotic free labels in the French pig industry

3.3 Practice abstract: “Antibiotic reduction schemes in the French poultry industry” - ITAVI

3.3.1 Summary

Following the first French national action plan EcoAntibio (2012-2016), several French broiler companies started to communicate on their antibiotic reduction schemes. In the scope of the ROADMAP project, six interviews were conducted to understand how producers’ organizations can commit to reduce their AB use in an economically sound way. The study mentioned in this practice abstract provides the outcomes of the interviews and practical recommendations such as the importance of investment in biosecurity and building in reducing the AB use in conventional systems.

The practice abstract could be found on the [website](#).

PRACTICE ABSTRACT

Antibiotic reduction schemes in the French poultry industry:

Choosing the right claim for the right market

Context & Methodology

Following the first French national action plan EcoAntibio (2012-2016) which has two main goals, 25% reduction of antibiotic (AB) use in veterinary medicine in 5 years, and a reduction of the use of critical antibiotics (fluoroquinolones and cephalosporin), several French broiler companies started to communicate on their antibiotic reduction schemes.

In the scope of the ROADMAP project, six interviews were conducted within the broiler sector including 3 producers’ organizations (PO), 1 PO president (poultry farmer), 1 hatchery and 1 retailer. The purpose of these interviews was to understand how the aforementioned private standards work and what their roles are in the reduction of antimicrobial (AM) use.

Problem

AB-free labels lead to little price premiums according to stakeholders. Considering the importance of antimicrobial resistance, how producers’ organizations can commit to reduce their AB use in an economically sound way?

Solution

Action plans to reduce AM use should follow different specifications depending on the production system and the client (market) demand. There are several types of claims concerning AB use in the French broiler sector such as:

- “Raised without antibiotic treatment” labels from national brand aiming at the retail market.
- PO committing to reach 90% of untreated flocks for the retail brands.
- PO committing to the removal of fluoroquinolones and colistin aiming at the catering market.

Outcome

- In France, the “raised without antibiotic treatment” labels are usually included in a broader labelling approach (Label Rouge, Animal Welfare, GMO-free...) and farmers receive a price premium, however it is hard to differentiate the bonus allocated to health from the bonus allocated to welfare or feed.
- In the case of a less restrictive antimicrobial reduction scheme (ban of colistin, 90% treated flocks), there is generally little to no price premium on the product.
- Stakeholders generally involve in an AB reduction scheme or a label since it is a technically feasible strategy to differentiate from competitors or to secure market sales.

Authors

Jonathan Hercule, Nathalie Rousset
ITAVI (French technical institute for poultry)
Contact email: rousset@itavi.asso.fr

Keywords

Antibiotic reduction, French poultry industry, AMR, AMU

Images

Example of labels.

PRACTICE ABSTRACT

Figure 3 Practice abstract: “Antibiotic reduction schemes in the French poultry industry”

3.4. Practice abstract: “Designing a good practices guideline for a prudent use of antibiotics in the poultry sector in Mozambique” – CIRAD and University Eduardo Mondlane

3.4.1 Summary

In 2019, the Mozambican Government adopted a multi-sectorial national action plan on antimicrobial resistance (NAP-AMR). However, little information is available on antimicrobial use and resistance in the Mozambican animal sector. The ROADMAP project in Mozambique is supporting the implementation of the NAP-AMR by identifying the socio-technical lock-ins and priority for action in the vet drugs and poultry sectors and strengthening a community of stakeholders with veterinary authorities, professional associations (poultry farmers, drugs sellers, veterinarians) and academia (veterinary and social sciences). The results of the project can be used to support the implementation

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of the good practices’ guideline among poultry farmers at national level and to mobilize the community of stakeholders for other activities contributing to the NAP-AMR.

The practice abstract could be found on the [website](#).

PRACTICE ABSTRACT

PRACTICE ABSTRACT

Designing a good practices guideline for a prudent use of antibiotics in the poultry sector in Mozambique

Context	Authors
In 2019, the Mozambican Government adopted a multi-sectorial national action plan on antimicrobial resistance (NAP-AMR). In the animal health sector, the plan gives priority to the poultry production sector.	Muriel Figué (CIRAD), Carlos Cuihane (Faculty of Arts and Social Sciences), Cristiano Macuamule (Veterinary Faculty), University Eduardo Mondlane
Problem	Keywords
Little information is available on antimicrobial use and resistance in the Mozambican animal sector. Experts suggest that there is a large misuse of antibiotics (AB) encouraged by an outdated and ineffective regulation. Most farmers have limited access to veterinary drugs, but imports of antibiotics have increased with the growth in poultry production that has doubled in the last 10 years.	Antibiotics, Antimicrobial Resistance, Poultry, Mozambique
Solution	
The ROADMAP project in Mozambique is supporting the implementation of the NAP-AMR by: <ul style="list-style-type: none"> Identifying the socio-technical lock-ins and priority actions in the vet drugs and poultry sectors, Strengthening a community of stakeholders with veterinary authorities, professional associations (poultry farmers, drugs sellers, veterinarians) and academia (veterinary and social sciences). 	
Outcome	
As expected outcomes: 1. Knowledge on: <ul style="list-style-type: none"> Veterinary drugs supply chain: its functioning and regulation. AB use in poultry production: quantification of AB use at farm level and drivers of the stakeholders' behaviours. 2. A good practices' guideline and a set of priorities for action in the poultry and the vet drugs sectors co-designed by academic and non-academic partners: CIRAD, University Eduardo Mondlane, Association of the Poultry Farmers of the Maputo Province (ADAM), Veterinary authorities (DINAV- MASA). 3. Training activities for: <ul style="list-style-type: none"> Veterinary students: measuring AB use at farm level. Poultry farmers: field trip and experience exchange with counterparts engaged in reducing AB use in La Reunion. 	
Practical recommendations	
The results of the project can be used in: <ul style="list-style-type: none"> Supporting the implementation of the good practices' guideline among poultry farmers at national level. Mobilizing the community of stakeholders for other activities contributing to the NAP-AMR. 	

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Illustrations & Photos

Trajectory of priority activities in animal health National action plan on AMR, Mozambique (2019)

Contribution of the ROADMAP project to the National action plan on AMR, Mozambique

Photo 1. Drugs retailing in Maputo Province, 2020 (Photo credit: M.Figué)

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Figure 4 Practice abstract: “Designing a good practices guideline for a prudent use of antibiotics in the poultry sector in Mozambique

3.5. Practice abstract: “Mapping of stakeholders of veterinary medicine products’ value chain to analyze their interactions and position regarding changes in AMU policy in Vietnam” – CIRAD and UMR ASTRE

3.5.1 Summary

The misuse and overconsumption of antibiotics (AB) in livestock production in Vietnam resulted in antibiotic resistance that was addressed in the National Action Plan in Animal Husbandry and Aquaculture in 2017. It is not clear how the strategies put in place are understood, accepted and applied by the different stakeholders in the antibiotic chain. There is a need to identify the bottlenecks and barriers to the implementation of the current strategies and recommend possible solutions to overcoming them, thus increasing the compliance of the legislation with the current situation in the sector. Within the ROADMAP project, Stakeholders Mapping and Analysis (SMA) is being carried out including the literature review of the legislative framework regarding veterinary medicine products and development of a timeline for the implementation of veterinary medicine products legislation and in-depth interviews with key actors to explore their abilities to comply with the policy. The expected outcomes of this study include providing recommendations to policy-makers to improve the

acceptability of measures and develop new strategies to reduce AMU in livestock production, developing local initiative to adapt to these changes and developing an AB-free or organic production to overcome legislative barriers. The practice abstract could be found on the [website](#).

PRACTICE ABSTRACT

Mapping of stakeholders of veterinary medicine products' value chain to analyze their interactions and position regarding changes in AMU policy in Vietnam

Background

The misuse and overconsumption of antibiotics (AB) in livestock production in Vietnam resulted in antibiotic resistance that was addressed in the National Action Plan in Animal Husbandry and Aquaculture in 2017 implemented by Ministry of Agriculture and Rural Development. One of the strategies is to review, amend and implement regulations and policies on antimicrobial use (AMU). Since 2017, a number of laws and decrees have been deployed to progressively achieve a total ban on the use of AB in animal feed (see illustration 1).

Problem

There have already been strategies put in place, but they have been developed with rather legislative actors. It is not clear how these strategies are really understood, accepted and applied by the different stakeholders in the antibiotic chain and whether there is a risk that they are in contradiction with the socio-economic and political interests of involved stakeholders. Therefore, there is a need to identify the bottlenecks and barriers to the implementation of the current strategies and recommend possible solutions to overcoming these barriers, thus increasing the compliance of the legislation with the current situation in the sector.

Solution

Within the ROADMAP project, Stakeholders Mapping and Analysis (SMA) is being carried out including the literature review of the legislative framework regarding veterinary medicine products (antibiotic and alternative medicines) and development of a timeline for the implementation of veterinary medicine products legislation and in-depth interviews with key actors to explore their abilities to comply with the policy.

The aim of the SMA is:

- To map the veterinary medicine products value chain (see illustration 2) and characterization of the stakeholders in terms of power, interest and influence around the policy changes.
- To understand how the new regulations are acknowledged, accepted and applied by the different stakeholders in the AB value chain.
- To study the interactions between stakeholders and identify those who have an important role in the implementation of the strategy and determine the stakeholder's barriers and motivations for implementing these regulatory changes.
- To identify the levers to be activated for better communication and integration of the strategy.

Author(s)

Chloé Bate^{1,2}, Nguyen Thi Dien³, Vu Dinh Toan³, Hanié Gourard⁴
 Contact email: chloe.bate@cirad.fr

¹ CIRAD, UMR ASTRE, Hanoi, Vietnam, chloe.bate@cirad.fr
² CIRAD, INRAE, Univ Montpellier, Montpellier, France, National Institute of Animal Science, Hanoi, Vietnam, nguyenthi.dien@cirad.fr
³ Faculty of Social Sciences, Vietnam National University of Agriculture, Hanoi, Vietnam, vudinh.toan@cirad.fr
⁴ Centre for Interdisciplinary Research on Rural Development, Vietnam National University of Agriculture, Hanoi, Vietnam, hani.gourard@cirad.fr
⁵ CIRAD, UMR ASTRE, 10900 Bangkok, Thailand, Faculty of Veterinary Medicine, Kasetsart University, 10900 Bangkok, Thailand, hnie.gourard@cirad.fr

Keywords

Participatory approach, regulations, antimicrobial use, livestock production, Vietnam

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PRACTICE ABSTRACT

Main legislation regarding AMU in Livestock Production in Vietnam since 2017

Expected Outcome

- To provide recommendations to policy-makers to improve the acceptability of measures and develop new strategies to reduce AMU in livestock production.
- To develop local initiative to adapt to these changes (ex: written agreement between drug sellers and local authorities).
- To develop an AB-free or organic production to overcome these legislative barriers.

Expected Impact

- A change in behavior and perception of stakeholders in terms of AMU.
- A better implementation of and compliance with the veterinary medicine products legislation.
- A change in AMU practices by a reduction of AMU and an increase of the alternative medicines use.

Illustrations & Photos

Illustration 1 - Main legislation on AMU in Livestock Production in Vietnam since 2017

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PRACTICE ABSTRACT

Veterinary Medicine Products value chain and interactions between key stakeholders in Vietnam from focus group discussion, 2020

Illustration 2 - Veterinary medicines products value chain and interactions between key stakeholders in Vietnam from focus group discussion within the ROADMAP project, Hanoi, December 2020

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PRACTICE ABSTRACT

Photo 1 - Construction of the veterinary medicine products value chain and interactions between stakeholders from focus group discussion with government members, feed company representative, veterinary medicines products producers and distributors, drug seller in Hanoi, 2020 (Photo credit: Nguyen Thi Thanh Hang)

Photo 2 - Drug seller in a drug agency, Bac Giang province, 2020 (Photo credit: Le Thi Thu Ha)

Follow ROADMAP

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Figure 5 Practice abstract: “Mapping of stakeholders of veterinary medicine products’ value chain to analyze their interactions and position regarding changes in AMU policy in Vietnam”

Conclusion

For the first batch of the practice abstracts, WPLs and CSLs from Italy, France, Mozambique and Vietnam have provided 5 practice abstracts including the final or expected results of their studies within the ROADMAP project. The practice abstracts are shared on ROADMAP's website and will be shared on social media channels such as Twitter, LinkedIn, Facebook and ROADMAP Stakeholders' Community group on Facebook.

Some of the interviews, surveys and analyses in the studies mentioned in the practice abstracts are still ongoing and will be finalized by the end of this year. Thus, some practice abstracts include final results with practical recommendations for the end-users, and some of them include expected outcomes, impact and the added value if the results of the study/project are implemented. The final results and outcomes of the ongoing studies will be included in the "D7.6 Second batch of practice abstracts for end-users" in M44.

5. Annex

5.1. ROADMAP practice abstracts in the Common EIP-AGRI format

In the attached Annex, ROADMAP project's information and the summaries of the practice abstracts have been filled in the Excel Sheet of the Common EIP-AGRI format, to be submitted to the EIP-AGRI website.

5.2. ROADMAP Common Practice Abstract Template

ROADMAP Practice Abstract Template

TITLE	
Subtitle	
Keywords	
Author(s) and institutes	
Institute website links	
Contact email (not obligatory)	
WP	
Original publication title & journal	
Original publication link	
Additional resources (videos, popular articles, websites...etc)	
Background (if necessary)	
Problem	
Solution	
Outcome	
Practical recommendations (<i>bullet points if possible</i>)	
On-farm/Market application (<i>bullet points if possible</i>)	
Illustration 1 (title)	
Illustration 2 title	
Photo 1 (title and credits)	
Photo 2 (title and credits)	
<i>Feel free to add other sections</i>	

Chart 1 ROADMAP Common Template for Practice Abstracts