

Synthesis *in itinere* case study « Sanitary surveillance»  
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## I-The innovation story

**Context and origin of the innovation:** In 2003 outbreaks of highly pathogenic avian influenza H5N1 (HPAI H5N1) are affecting Southeast Asia (China first and then Vietnam in 2004). CIRAD-AGIRs is mandated by the OIE and the FAO to train veterinary services in SAE on epidemio-surveillance (**INPUT 1**). In 2006 the HPAI H5N1 is declared in Europe and some African countries, mobilizing the international community to prevent further spread of the epidemic in all African countries and to prevent new introduction of the disease from Asia to Europe. This unprecedented crisis is the trigger for a global commitment to enhance health surveillance in all countries to limit the pandemic risk. In this context AGIRs is implementing a project about the epidemiology and ecology of HPAI and Newcastle disease in Vietnam and in 5 other countries in Africa with the support of the French Ministry of Foreign Affairs (GRIPAVI project, 2007-2011). Studies conducted within the GRIPAVI project and from other research projects in SEA driven by CIRAD-AGIRs (Flavie Goutard, ECOFLU and RIVERS, 2007-2009) (**INPUT 2**) **highlight the poor quality of the data from national surveillance systems (Vietnam, SEA as well as in Africa) and their limitations to be used in the analysis of disease epidemiology and to assess the impact of control measures.** François Roger (Director of the Unit AGIRs and coordinator of GRIPAVI) is setting up in 2009 a project on the development of quantitative methods to evaluate the performance of HPAI surveillance systems in SEA (REVASIA-FRIA, 2009-2010, project funded by the DGAL) in order to answer these new research questions. **This project represents the very first step of development process of our innovation (development of tools for evaluating surveillance systems).**

**Step 1 : development and implementation of the evaluation tools:** From 2009 to 2011 (REVASIA-FRIA project), quantitative evaluation tools of surveillance systems performances are developed in Thailand, Laos and Cambodia and will be applied later on in Vietnam (**INPUT 3**): 1) following a workshop held in Viet Nam (co-organised by CIRAD and Department of animal health, Viet Nam (DAH) (Do Hu Dung)), the OASISTrop tool is designed for the evaluation of HPAI surveillance in Laos and Cambodia (L. Minodier) 2011; C.Faverjon, 2011; Faverjon et al, 2015) from OASIS which is the primary tool for the evaluation of systems organisation (Hendrickx, 2011); (2) the capture-recapture (CR) method used to evaluate the sensitivity of surveillance systems, is developed in Cambodia (T. Vergne, 2009-2010)and will be applied in Thailand and Vietnam in 2012. In 2010 François Roger is developing a project on the development of tools for the economic evaluation of health surveillance (REVASIA Socio-Eco, financing AFD) because at that time there are no tools or economic assessment methods adapted to developing countries (PVD), while these economic aspects are essential for decision-making and the choice between different monitoring strategies, especially in countries with low-resources. Marisa Peyre, is recruited in 2009 on the REVASIA-FRIA project, she arrives in Vietnam in 2010, based at the National Institute of Veterinary research (NIVR) where she takes the coordination of the research program REVASIA which integrates at this stage REVASIA-FRIA and REVASIA Socio-Eco. The NIVR and Hanoi University of Agriculture (HAU now VNUA) are historical partners of the CIRAD in Vietnam in animal health. However the DHA, key political and technical actor in what concerns surveillance systems allows REVASIA (Dr. Nam and Dr. DH Dung) but does not take an active part in the development of innovation although they are the primary beneficiary. From 2011 to 2015, new activities are joined to the programme and especially the 'swine flu' project on the economic evaluation of pilots surveillance components of swine influenza in Vietnam and Laos (BAM and al, 2014; BAM and al. 2015), in collaboration with the University of Hong Kong (HKU, Malik Peiris), the NIVR (Nguyen V. Khong; DD Dung) and VNUA (VD Ton and DT Hiep) (**OUTPUT 1**). In 2012 participatory epidemiology (PE) tools are adapted to the economic evaluation of animal diseases surveillance systems (pigs and poultry) in Vietnam and especially on the assessment of societal costs

and benefits of surveillance systems; the social network analysis (SNA) is adapted at the same time to the evaluation of the flow of health information (types of actors, types of contacts, types of information) (economic evaluation study of surveillance of HPAI, Delabouglise et al 2015) (**OUTPUT 2**).

**Step 2 : Endorsment of the innovation, first OUTCOMES, first IMPACTS .** From 2012 to 2016 the knowledge of researchers of the NIVR, VNUA, NIAS, the University of Nong Lam (Ho Chi Minh) as well as of the agents of DAH and NIHE are reinforced in what concerns technical assessment of surveillance (PE, CR, SNA) systems (**OUTPUTS 3 & 4 and OUTCOME 1**). In 2013 the NIHE applied CR method to the evaluation of rabies surveillance (**OUTCOME 2**). In 2014, the NIVR launches its program of swine influenza surveillance following the results of the project "swine flu", the program is still ongoing (**OUTCOME 3**). Between 2012 and 2014 the PE tools developed in REVASIA are applied to the evaluation of surveillance in France, Belgium, Germany (EU RISKSUR project) and in Egypt with the collaboration of policy makers and FAO (**IMPACT level 2**). In 2015 the VNUA (VD Ton) develops a research project to evaluate market chain of sick animals (Pigs) in Vietnam through SNA method (SICKPIG) (**OUTCOME 4**). In 2016, the DAH and FAO contract the Royal Veterinary College (RVC) to evaluate the HPAI surveillance system in Vietnam. Timothée Vergne (trained in evaluation by CIRAD (PhD) in the context of REVASIA-FRIA) is in charge of the evaluation and will apply the tools developed by CIRAD in REVASIA and RISKSUR (**OUTCOME 5**).

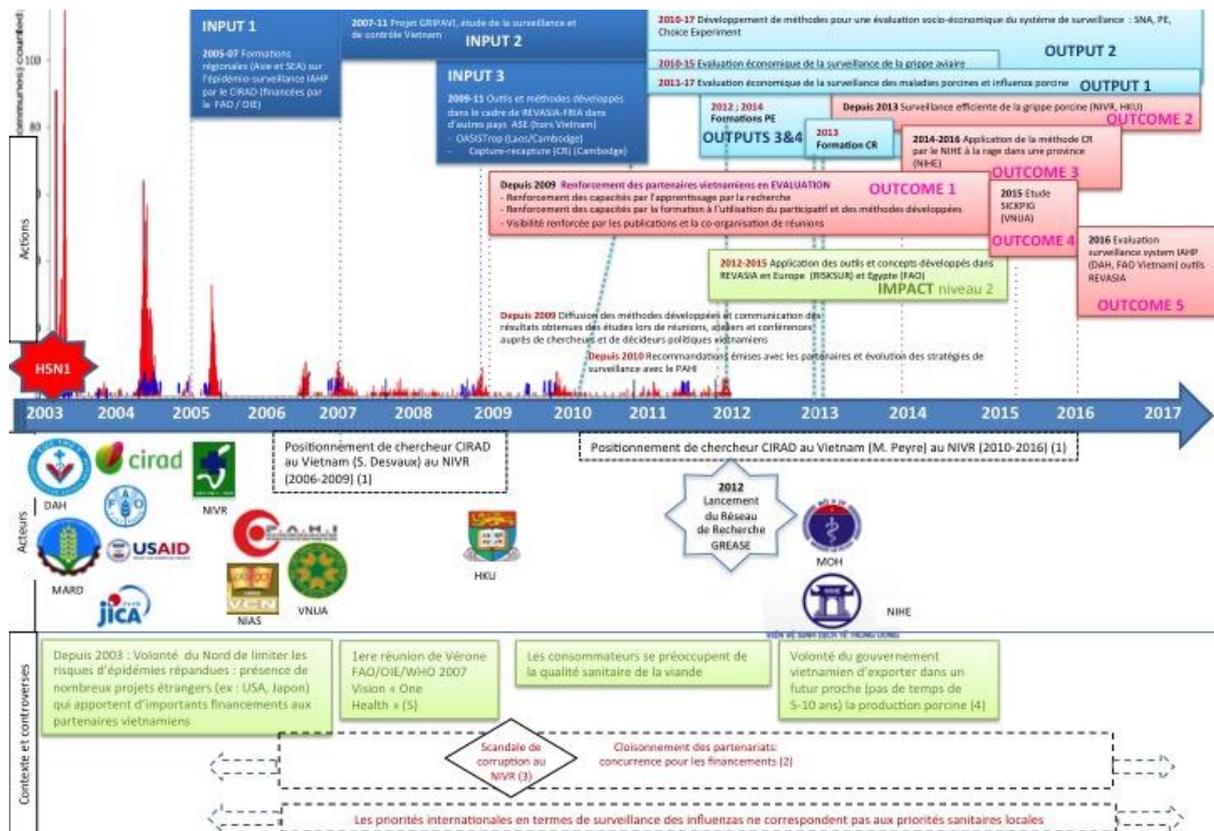
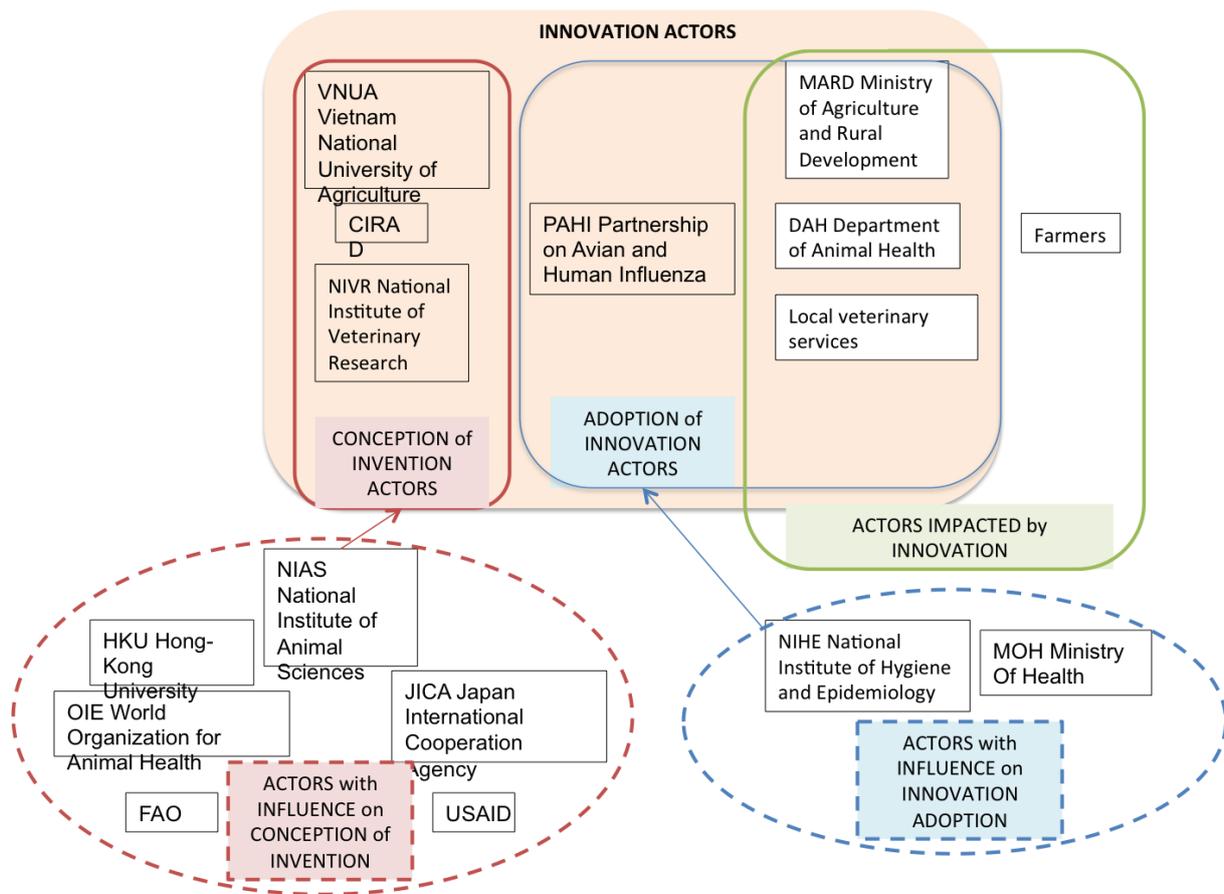


Figure 1. Timeline of case study story "Sanitary surveillance". (1) facilitation of project implementation; (2) limited involvement of DAH ; (3) loss of reputation of NIVR; (4) needs for improve surveillance to access world markets; (5) will to link animal and human health.



**Figure 2-Mapping of actors of case study “Sanitary Surveillance”**

## II- Lesson learned from impact pathway analysis

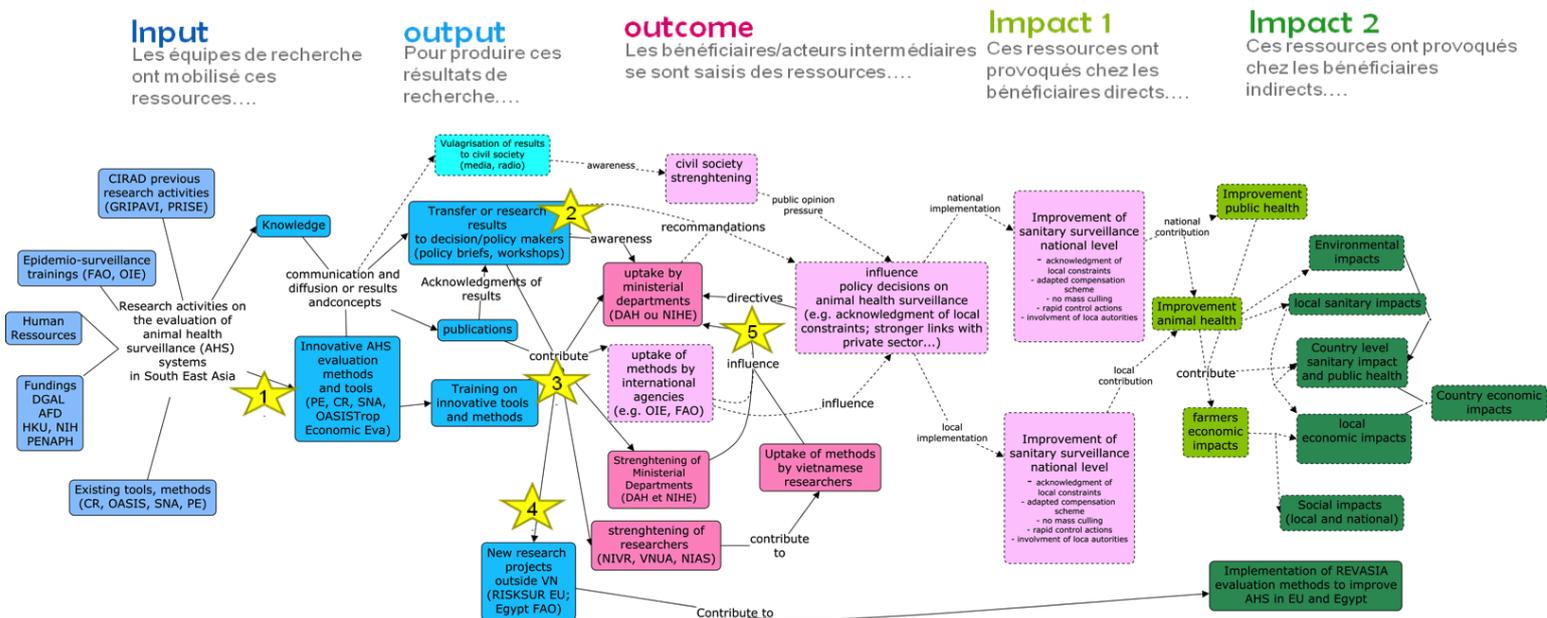


Figure 3- Impact pathway of case study « Sanitary surveillance», in itinere (2016). Stars represent learning situations ; dotted lines represent expected outputs (light blue), outcomes (light pink) or impacts.

The Inputs to the path of the impact of our innovation "Improvement of health surveillance by the use of evaluation tools and methods" are composed by the researches that were upstream of the innovation process and that have initiated the research questions, the methods and tools pre-existing and then adapted to the evaluation of surveillance within the innovation development (PE, CR, OASIS, SNA) and finally the resources needed to develop the innovation. **Six main categories of Outputs have been identified:** I1) the production of knowledge (related to the implementation of the activities in the field of research); I2) the development of innovative tools and methods for evaluation (PE, CR, OASISTrop, Eva economic...); I3) publications; I4) the activities of transferring the results of research to decision-makers (policy brief, workshops); I5) the training of researchers and decision makers; I6) the development of new research projects that contributed to achieve a level 2 impact with the implementation of the innovation in other geographical areas (EU and Egypt). On the eight Outcomes identified, only 4 have been met: the capacity building of researchers and policymakers in the evaluation of health surveillance, which contributes to the appropriation of the evaluation methods and to influence policies of surveillance in order to improve it, either at national level, or at local level. These two scales of influence lead to different impacts in terms of the sustainability of the health situation improvement and the impact in terms of public health. Indeed, an improvement of the health situation at the local level is not sustainable if the situations of the neighbouring localities do not improve and impacts resulting therefrom are therefore limited. We note that all impacts are for the moment expected ones, indeed the innovation process is underway, with the ownership and the implementation of the tools of evaluation by the policy makers (DAH) extremely recent (2016). The process is still at the stage of the innovation transfer to the users (in itinere case study).

### **III- What are the scenarios to achieve the expected impacts? Which types of follow-up to select (importance of indicators)?**

#### ***III-1 Proposed scenarios to link the outcomes to expected impacts***

In our case study we have mainly worked on possible solutions to link the outputs to the outcomes. According to scenarios, impacts arising therefrom are not the same. To develop and validate these scenarios, we relied on three participatory workshops and on the analysis of the workshops conclusion.

##### **Workshop 1 :**

Objectives – To present the results of the research done in evaluation of the health surveillance activities in Vietnam and discuss their importance, applicability and potential impacts to improve surveillance (March 15, 2015 workshop) with the representatives of all stakeholders involved in research, the beneficiaries of innovation and the policy makers.

This workshop was organized by the main research partners (NIVR and VNUA) and entitled "Workshop of the research program REVASIA on innovative approaches for the assessment of health surveillance systems: switch from research to political decisions". This title was chosen to facilitate the participation of all stakeholders and also to move discussions towards this essential aspect of the innovation and identify as a limiting point in the adoption of innovation by political actors. The IMPRESS method was also presented in this workshop to promote the involvement of stakeholders in the process of collecting data which was subsequently organized. A discussion in plenary was organized following the presentation of the different results of the research and the objectives the workshop. This discussion helped to highlight the levers and brakes inherent to the impact of the research in Vietnam. The group discussions were organized in Vietnamese and English to identify main interest and priorities on the assessment and improvement of surveillance in Vietnam on the basis of the presentations and the expertise of the participants.

**Workshop 2 :** Identification of scenarios to transfer research results to policy makers (June 16, 2015, workshop).

This workshop helped to present the preliminary results of the impact assessment and the use of data collected from participants. But it was also useful in the definition of the different scenarios for the adoption of the results of research and thus the implementation of innovation by policy makers. The rate of participation in this workshop was the same as for the first one with representation of all stakeholders (the same as the first as well). Following the plenary presentations of preliminary results of the impact study, the participants were divided into 2 groups to work on different scenarios to answer the following question: "how to improve health surveillance in Vietnam". Each group should answer the following 3 questions by constructing a 'path of impact': 1) what are the strengths/weaknesses of the current systems; (2) what actions to implement to improve them; (3) who (which actors) must be involved and why?

**Workshop 3 :** Validation and representation of « path of impact » scenarios

The third and last workshop organized in December 2015 did include the same participants as the first two workshops. Its objectives were to present and validate the scenarios produced by the team of the case study after a work of simplification and schematic representation. This workshop didn't provide more elements than the second workshop, the scenarios have been quickly validated by the participants who would have surely loved to go further in the analysis. We could have worked on impact indicators but it was too early for the team's case to address this aspect at this stage of the study.

### Scenario 1: Influence of public policies at the national level

The first step of this scenario is representing how research projects are implemented in the field in Vietnam; this research involves Vietnamese researchers, local authorities and local beneficiaries (veterinarians and breeders). Currently (branch 2), the results are transferred to decision-makers (DAH, MARD) by the means of scientific reports containing recommendations that can be directly taken into account to modify and improve the health surveillance (e.g. how to take into account local constraints to decrease the number of under reported case of diseases). The impact of this approach is limited by the involvement of policy makers, and can be very limited if they do not contribute to the implementation of activities.

One possible alternative developed during the participatory discussions is the implementation of pilot research protocols at the national level to validate the results before recommendations can be made (branch 1). These pilot studies can be directly implemented by the departments of the Ministry (DHA) to secure their confidence in the results or by Vietnamese researchers but at the request of the DAH and under its authority. The improvement of surveillance by a change of policy at the national level involves improved sanitary situation in the whole country, which favours efficiency, and sustainability in the activities of diseases control. However the improvement of surveillance at national level may also have a negative effect on local veterinarians (too much work load) and farmers (slaughter of animals) and must take into account local constraints to be effective and sustainable.

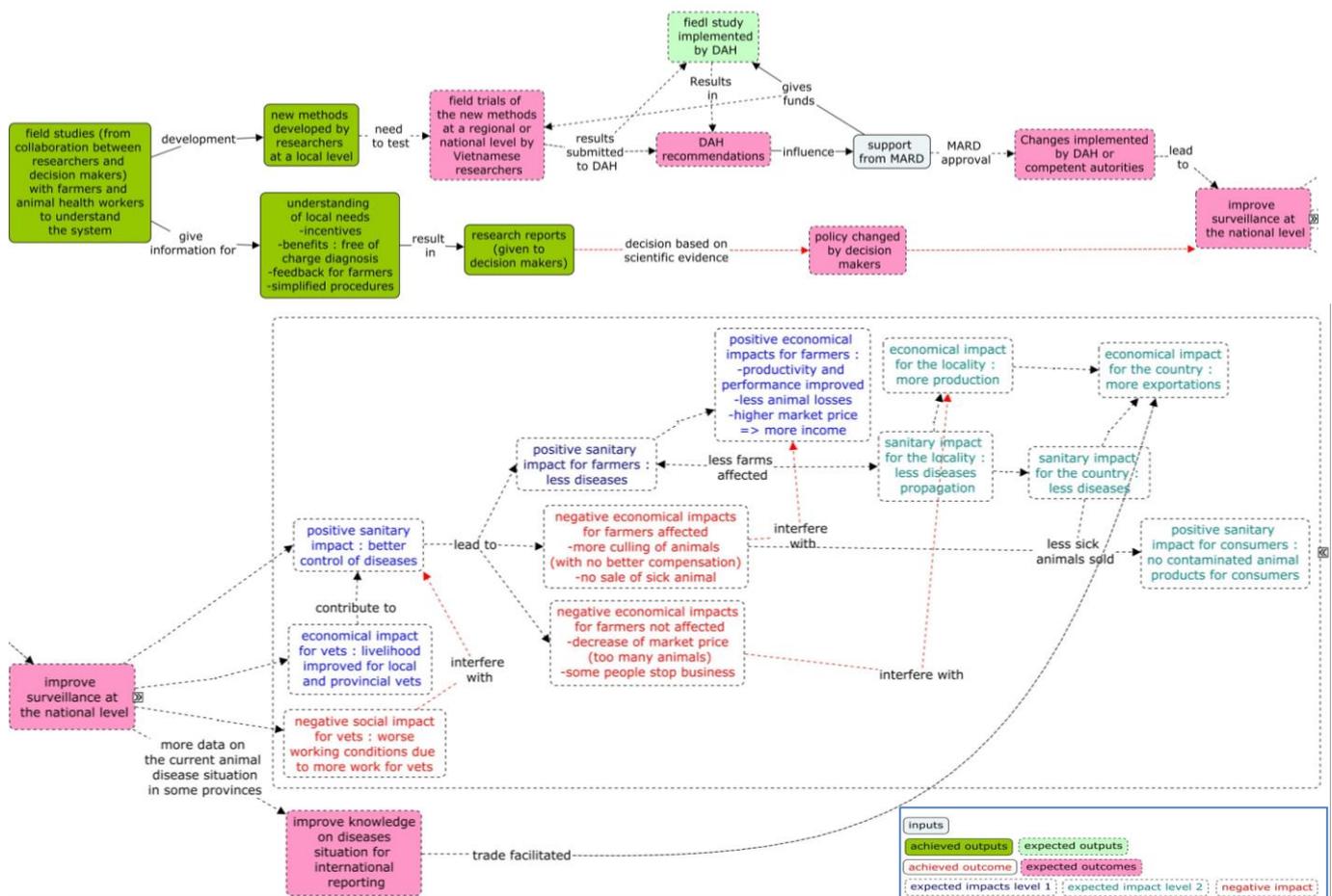


Figure 2. Scenario 1, direct influence of research on national surveillance policies

### Scenario 2: Influence of local public policies (provincial level)

Scenario 2 proposed by the participants of the workshops put forward the importance of local authorities in the implementation of surveillance activities and health control and their potential influence on activities at national level. Indeed, in this scenario, the results obtained by the field research activities are presented to local authorities to help them to improve locally health surveillance system. If livestock production is a priority of the province, the People's Committee, the authority of the province, can directly take into account the scientific recommendations and influence the changes in the surveillance system of the Province. However the impact, which would be an improvement of the local health situation, might not be sustainable if the health situation is not also improved in the other provinces. However if these changes result in a positive impact and an improvement in the health situation of the Province, this may influence the Ministry to test this type of change in other provinces, or neighbouring provinces may decide to implement the same changes (snowball effect).

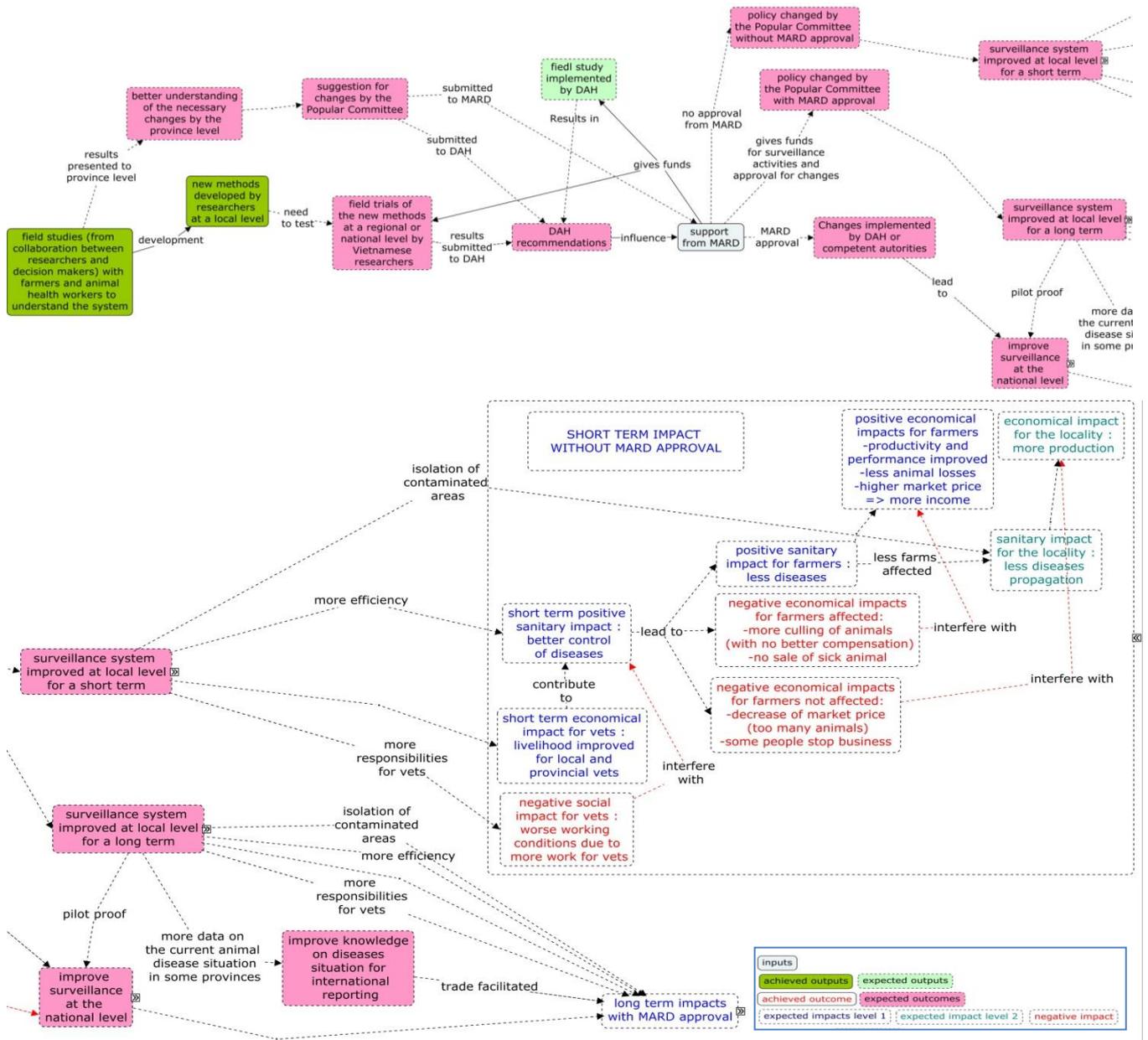


Figure 3. Scénario 2 : Influence of local surveillance policies (Province level)

### Scenario 3: Influence of public opinion

The third scenario proposes to sensitize civil society by widely disseminating scientific results in a popularised format via different Medias. However this type of information must be previously authorised by the MARD. Vietnam has many Medias; they are however very controlled by the central Government. They have a dual role as mass organizations: they are the spokespersons of the Government, which finances and controls them, and sometimes also the spokespersons of the people. Another approach would be to use internet and social networks to inform consumers. Today more and more Vietnamese have access to internet, particularly via their mobile phone. It is a neutral way for Vietnamese and social networks play a major role in mobilizing the population around a social event. Another approach would be the dissemination of information by farmers' organisations but they remain marginal in Vietnam and still have a limited political influence.

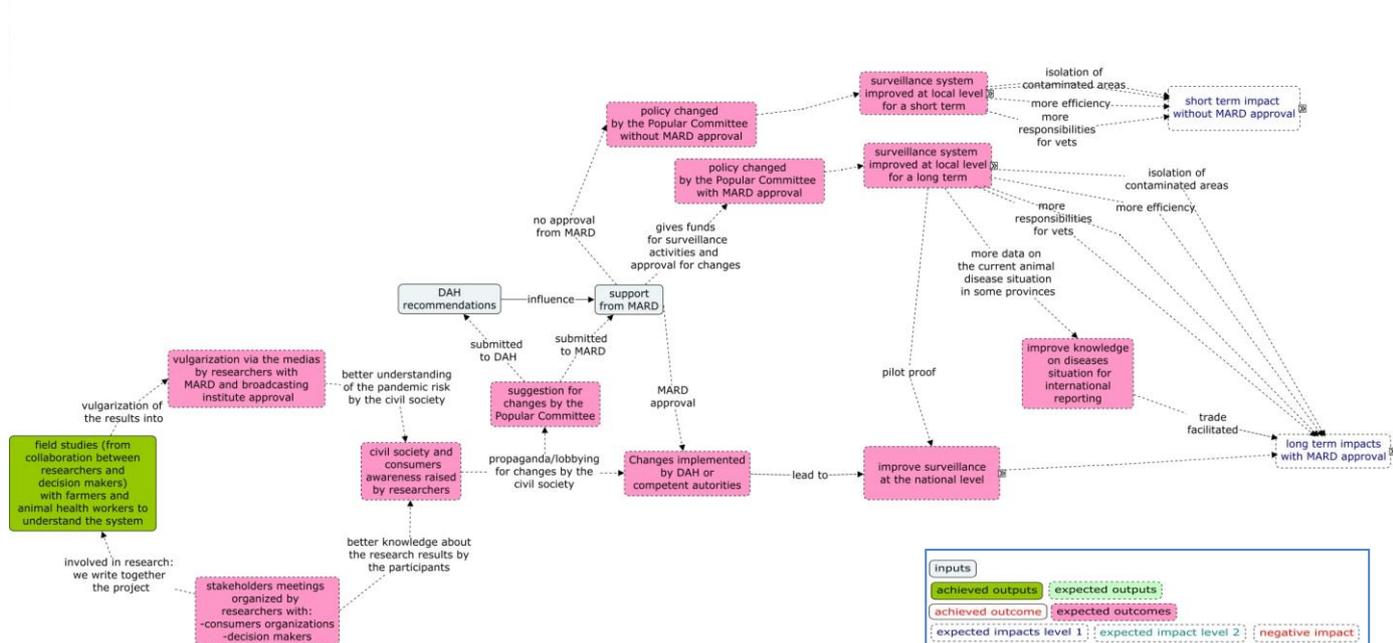


Figure 4. Scénario 3 : Influence on public opinion

### III-2 Which are the possible way of follow-up integrating the indicators for each type of impact.

This part of the analysis could not be implemented in our case study, because of its early-ongoing nature (recent outcomes and no impacts of level 1 until now) and by a lack of time at this stage of the evaluation.