

SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

Action number: TD1404 (Network for Evaluation of One Health, NEOH)

STSM title: Literature review and meta-analysis of One Health initiatives evaluated using the NEOH framework (WG3)

STSM start and end date: 09.04.2018 – 13.04.2018

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PURPOSE OF THE STSM

The NEOH Consortium has been working on the development of a standardized framework approach for the evaluation of OH initiatives since the start of the COST Action TD1404 in 2014. This Consortium defined four Working Groups (WG). The first WG aims to develop an evaluation framework and a handbook to evaluate OH cases. This WG has already finished and the outputs are being peer-reviewed as well as the handbook. WG 2 aims to apply this evaluation framework in different OH case studies. This WG has already applied the above mentioned framework on eight case studies and outputs are on publication process. These publications can be accessed through the following link [special issue of Frontiers](#). WP3 aims to conduct a meta-study of evaluated OH case studies in order to carry out a comparative analysis and contribute in informed policy-decision making process. Nonetheless, this requires a more extensive number of case studies than the eight case studies from WG2 to obtain representative output results.

As a consequence, it was decided to continue evaluating a number of OH case studies from available publications and to evaluate them applying the OH evaluation tool. These evaluation results will be later analysed in the meta-analyses with the previous eight case studies from WG2.

This new approach will require:

- 1) To re-define and to simplify the NEOH evaluation tools in order to adjust the level of information provided in journal publications and/or project reports.
- 2) To gather data through the evaluation of a significant number of OH case studies.
- 3) To perform a multivariate analysis using the data from all evaluated OH case studies to explore possible cluster associations.

The above mentioned tasks requires deep reflexions and group discussions which apart from being very enriching are also very time-consuming. It was assumed that this tasks will take more time than the one allocated for a STSM and therefore, WG-3 participants would be encourage to finalise the programmed objectives after the STSM.

The output of this STSM involves evaluations of OH initiatives reported in the literature to shed light into the OH initiatives characteristics and the relationship among them. Possible relationships within and among different categories of characteristics such as working, learning, sharing etc. are considered highlighting the underlined process of OH initiatives.

This work also serves to illustrate the usefulness of the adjusted/simplified NEOH framework and tools in the One Health community and to raise attention to the methods developed by NEOH.

Finally, the group STSM aimed to build capacity in WG3 by aligning the understanding of the evaluation/scoring approach and specific criteria in this fairly complex framework.

Last but not least, WG 4 aims to dialogue with national governments, NGOs, research organizations and industry to safeguard that the evidence products during the project will be used to address the needs of decision-makers and relevant stakeholders.

DESCRIPTION OF THE WORK CARRIED OUT DURING THE STSM

This STSM was organised as group work involving Biostatistician Vladimir Grosbois as the host at the *Centre of cooperation Internationale en Recherche Agronomique pour le Développement* (CIRAD) in Montpellier (France) visited by Dr. med. Vet. Ranya Özcelik (Veterinary Public Health Institute of the Vetsuisse Faculty, University of Bern), Violeta Muñoz-Gómez (DVM, MSc, ECVPH resident, SAFOSO, Bern) and Ida Söderström (National Veterinary Institute, Sweden). The members of this group arrived to Montpellier during the weekend to be able to meet at CIRAD and work together on the tasks from Monday 9 to Friday 13 April 2018.

The following lists the daily accomplishments during that week:

Monday 9 April 2018:

Introductions of STSM participants were carried out at the beginning. As networking is an important part of a STSM, getting to know participants' backgrounds was highly appreciated. Vladimir introduced the NEOH Project emphasizing the objectives of WG3 and the above mentioned changes within this WG.

The three participants, together with Vladimir started the first application of the evaluation tool on a chosen OH case-study¹. First steps prior applying the evaluation tool involves a deep and comprehensive reading at individual level and a brief group discussion to exchange thoughts and ideas about the approach of the selected OH case-study. It is highly important to reach a good agreement in relation to the context characteristics and the OHness of the OH case-study as it will affect the evaluation outcomes. It was mentioned that at least each case study should be evaluated by two people in order to diminish research bias.

Afterwards, the whole team started applying the first excel file of the evaluation tool called "*OH context and initiative description*" to describe the general characteristics of the OH initiative. As this was the first time that all participants were in contact with the evaluation tool, Vladimir kindly participated in the evaluation guiding patiently the participants and solving their queries. Chapter 3 of the handbook² was mentioned as a useful tool to clarify concepts and approaches during the evaluation process.

Tuesday 10 April 2018:

Participants and Vladimir continued the evaluation of the previous case-study followed by engaging discussing on the "trans-, multi and interdisciplinary" framework considering the objectives of the study and how transdisciplinary was planned. The importance of differentiating the stakeholders (i.e. actors involved in the initiative whose answers can change the initiative implementation) was highlighted. In general, stakeholders are the Scientists. In this discussion, it was agreed that the non-scientific community had not been involved much into the study, but not because there were obvious boundaries, much rather because there had been no time and resources planned for their involvement.

Furthermore, it is plausible that certain kind of required information for the evaluation is not provided in the paper. In this case, evaluators should look for other sources of information which are publicly available. In this case, participants had to look into the project report of the case study in order to grasp information about the activities performed within this OH initiative.

Discussions on the understanding of different dimensions (spatial, temporal, life dimensions and others) were carried out among the STSM participants and Vladimir. In general, the concepts of dimensions were

rather difficult to understand and to perceive for participants. It took some time and further discussion after the work day to figure out how to approach that kind of thinking for the evaluation.

To sum up, during this day 'sharing-learning-working and planning' categories were assessed.

Wednesday 11 April 2018:

Participants and Vladimir continued with the thinking part of the evaluation, taking up from the "dimensions" discussion which took place the day before. Vladimir Gorbois gave a great example on how to approach different scales of economic impact by using the Foot and Mouth Disease in cattle as an example. Discussions followed on the economic impact can be rather low for a local African farmers whose cattle might not die by the infection, but weaken them. As these farmers are mostly consuming their own animal products, the disease will not affect them in huge ways. Whereas the country in which Foot and Mouth disease is apparent cannot export animal products to other countries and therefore is at risk of losing more. A discussion about the time delays in the context of systems thinking was carried out

In order to speed up the evaluation process, one of the tactics is to scan the paper looking for the required indicators. This advice helped to finish the evaluation quicker and to proceed with the following one picking out two new OH initiatives^{3,4} for the first individual evaluations.

It was decided to split up the group in two to work in the following case studies so that each individual could apply the evaluation tool alone and then compare the results with her/his partners. Also, working individually allowed evaluations to be performed more efficiently and also to apply the concepts learnt in further discussions in pairs. One group was formed by Vladimir and one of the participants (i.e. a senior and a junior scientist) and the other group was set up with the other two participants, both of them junior scientists. Case studies were selected, as previously, from the pre-defined systematic review database.

Thursday 12 April 2018:

Individual evaluations continued as the day before. This permitted to train participants' judgement. After finishing the individual evaluations groups in pairs were re-arranged again to compare individual results. Participants realized that the evaluation process was more challenging to come to a common agreement between two junior scientists, than between a senior and a junior scientist due to the lack of expertise. Nonetheless, the leader of the STSM, Vladimir, solved patiently the doubts raised in the junior scientists' group, building up their confidence. It's worth mentioning that during the whole evaluation process, there was a high supportive atmosphere which was very appreciated.

Friday 13 April 2018:

Both groups finalised teamwork evaluations so that each case study ended up having a common and unique score. In addition, Vladimir Gorbois demonstrated us an integrative analysis using R software and applying preliminary results from previous evaluations together with the data obtained during this STSM.

Discussions were carried to explore plausible approaches which show cluster-relationship. In this way, performing the analysis would elucidate which common factors are shared in the "thinking, learning, working, sharing, planning" scores given in the evaluations.

To sum up, this STSM has been a fantastic opportunity, especially for junior scientists who were intensively reading and reflecting on the OH evaluation tool. This intensive process permitted to gain a better understanding of the NEOH project and the different OH initiatives.

References

1.Ndeledje N, Bouyer J, Stachurski F, Grimaud P, Gaston Belem AM, Mbaïndigatoloum FM *et al.* Treating Cattle to Protect People? Impact of Footbath Insecticide Treatment on Tsetse Density in Chad. Plos One. 2013; 8:6.

2. Chapter 3: A One Health Evaluation Framework. Evaluation for OH initiatives. Edited by Simon Rüegg and Barbara Häsler. Rüegg S, Häsler B, Boriani E, Hald T, Bardosh K, Chantziaras I *et al.* Manuscript status.
3. Ramesh Masthi NR, Ashwath Narayana DH, Kulkarni P, Gangaboraiah, Belludi A. Epidemiology and prevention of animal bite and human rabies in a rural community-One health experiment. *Asian Pacific Journal Tropical Disease*. 2014; 4 (Suppl 1): S486-S490.
4. Schurer JM, Ndao M, Skinner S, Irvine J, Elmore SA, Epp T, Jenking EJ. Parasitic Zoonoses: One Health Surveillance in Northern Saskatchewan. *PLoS Negl Trop Dis*. 2013; 7(3): e2141.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

It turned out to be a very difficult process to ensure that we all understood and agreed on the purpose and scoring criteria for each evaluation point for each case study / publication. This means that it will be hard to include new people in the scoring group. However, more people are needed, if we are to score many studies before the multivariate analysis can be performed. We therefore had to adjust the plan a bit, but still managed to create the most important output: **new simplified NEOH recording and scoring tools**. Hence, the main achievement of the STSM was that we developed an explained and exemplified adjusted version of the NEOH evaluation tools that can be used to extract information from published studies (i.e. peer-reviewed journal papers and project reports) of One Health initiatives for evaluation of system/context and initiative within the system descriptions (WG 1), theory of change-impact description (WG 2) and simplified One Health-ness evaluation (WG 3).

We also developed a log-book with notes for the future manuscript preparation, and a Mendelay reference group was initiated.

Important notes for working with the updated evaluation tools:

- 1) *If we only include one paper in the evaluation of each One Health initiative, we might miss important aspects of the initiative described in different publications and the systems thinking, integration etc. in the actual initiatives. This can be addressed either by including more papers for each initiative, which will require a lot of extra work and will be difficult, or we can discuss it in the WG3-manuscript.*
- 2) *Systemic organisation is going to be difficult if not impossible to assess from published papers, because it requires being able to talk to people actively involved in the initiatives. The needed information for the scoring is typically not included in the reporting of the initiative, so even though it is an important aspect of transdisciplinarity we cannot include it in the assessment of OH-ness based only on written materials.*
- 3) *The evaluator has to understand the health issue to be able to score the system description, e.g. should understand basic principles of vector-borne diseases, if the initiative is about vector-borne disease.*
- 4) *The second question in the thinking tool now evaluates (i.e. scores) whether the initiative actually addresses all of the relevant dimensions in the system (the match), and the original matching question has been deleted entirely. Therefore the questions are differently phrased than in the original evaluation tools. However, it makes the scoring exercise simpler, and this was the intention with simplifying the tools.*

FUTURE COLLABORATIONS

Future collaborations were mentioned during the week such as for example, the possibility to participate in research projects at CIRAD. Furthermore, as two of the participants come from the same country, this STSM enabled them to know more each other and quickly identify upcoming collaborations. The group members will continue the work on the WG3-tasks to the extent possible for each person and with regular online meetings to compare evaluation scores. The STSM group members agreed to evaluate two more OH case-studies and to hand these results in to Vladimir Gorbois via email.

