

One Health in Cambodia's farming communities

Experimenting with the One Health (Ecohealth) approach at the level of farming communities to improve the quality of life in the districts of Baphnom and Mésang (Prey Veng Province)



Waste incineration device installed in a school

COUNTRY

Cambodia

DIRECT BENEFICIARIES

133 families in 14 villages

PERIOD

**August 1, 2016 -
December 31, 2018 ⁽¹⁾**

TOTAL COST

€100,000

MAJOR DONORS

**French Development
Agency (AFD)**

LOCAL STAKEHOLDERS

**Baphnom Meanchey
Cooperative, village
animal health workers
(VAHWs) and public
veterinarians of
the two districts,
local authorities
(commune and village
leaders), 4 health
centers and 4 schools
in the two districts.**

AVSF CONTACT

Hervé PETIT

▶ h.petit@avsf.org

Manuelle MILLER

▶ m.miller@avsf.org

⁽¹⁾ Previously, since 2012, actions in animal health and support for animal husbandry techniques have been carried out in the area thanks to funding from Merial.

Although the One Health [EcoHealth] concept has been widely publicized for several years and featured in numerous events, publications, strategic documents, etc. in relation to animal and public health, it is rarely applied in a concrete way in the field. There are still only very few development actions based on an integrated approach to animal health, public health and environmental quality.

Between 2016 and 2018, AVSF deployed a pilot project in 14 villages in five communes in the two districts of Baphnom and Mésang (Prey Veng Province) to support livestock farming and integrated management of issues in animal, human and environmental health as part of the One Health approach. In particular, it included applying numerous prevention and biosecurity measures and developing increasing consideration for zoonotic diseases and the quality of the environment in the participating rural communities living in daily contact with different animal species.

1.

A technical and economic operation on small family livestock farm before expanding the scope of action

The actions developed were primarily based on a local assessment carried out with community leaders through various consultations and a joint analysis of local needs and constraints. In order to gain the support of livestock farming households, whose main concerns are logically increasing their income and improving their standard of living, part of the project's actions were directly focused **on technical support activities for small livestock farms aiming to increase production and health quality of livestock and to improve marketing.** These actions addressed public and environmental health components in consultation with, and with the support of, the many stakeholders concerned^[2].

The first dimension of the project thus focused on strengthening the farmers' capacity to effectively manage animal health and livestock breeding in a sustainable and secure manner, in terms of veterinary public health, allowing an increase in livestock productivity: chickens, pigs and cattle. It was based on organizing training in improved animal husbandry techniques (use of incubators, artificial insemination of pigs, fodder crops for fattening cattle, etc.) and study tours in each of these three livestock productions. A provision of animals (poultry)



Community Health Day (CHD)

and small livestock production equipment allowed the participants to initiate or grow their animal husbandry activity in accordance with recommended practices. Particular emphasis was placed on awareness and control of zoonotic diseases that can affect each of the species addressed: avian influenza in poultry, larval parasitosis in pigs and cattle, etc. Parasite treatment and vaccination campaigns against the main contagious diseases^[3] were organized. Lastly, the farmers were structured in groups around the same kind of livestock production, and local collectors were supported by the project in order to improve market knowledge, commercial relations and the negotiating power of producers, thus contributing to the overall sustainability of the program.

The second set of activities aimed to develop the management abilities of the six livestock farmer groups formed and the village veterinary input store, enabling them to provide livestock and animal health support services for the entire livestock farming community. They were based around organizing business management training (entrepreneurship, business planning, savings and micro-credit group activities, record keeping and inventory control, etc.) and providing financial support for the veterinary store and the six farmers' groups.

The third set of activities was aimed at raising awareness and promoting the adoption of good practices in public health and waste management by community members, stakeholders and

THE PROGRAM IN A FEW FIGURES

22 training sessions on improved animal husbandry techniques, attended by 344 participants, including 237 women, resulted in an average increase of 30% in the level of knowledge of the participants and a 60% increase in the size of the livestock within the families supported.

9 business management training courses attended by 26 participants, including 14 women.

Preventive treatments – deworming and/or vaccination – applied to 18,382 poultry, 2,258 pigs, 137 cattle and 3,354 dogs to benefit 1,098 families.

10 VAHWs trained in good practices for medicine use and management.

4 waste incinerators are now operating in the area, and 5 sets of 3 containers for selective waste sorting are available to the villagers.

1 half-day rabies vaccination campaign with 95 participants (including 45 women)

4 Community Health Days, each lasting half a day, which brought together 512 people (281 women), including about 400 primary school students.

[2] Village animal health workers of the area, public veterinarian of the district of Baphnom, local authorities (commune and village leaders), health centers of the two districts, schools of the two districts.

[3] Newcastle disease, avian smallpox and cholera; classical swine fever, atrophic rhinitis, pasteurellosis, pleuropneumonia, hemorrhagic septicemia, etc.

schoolchildren. The village animal health workers (VAHWs) already present in the area were trained with additional modules on the proper management of veterinary medicines: compliance with indications, doses and waiting times, supply of quality veterinary medicines, proper management of antibiotics to prevent the appearance of antibiotic resistance, management of medical waste by setting up storage containers for used vials and syringes, etc.

The specific theme of rabies, a real scourge in Cambodia, was addressed during a dog vaccination campaign accompanied by a public awareness initiative on the precautions to take in case of a bite. The project also supported the installation of equipment to **preserve the cleanliness and quality of the village environment:** waste incinerators and selective sorting containers.

Finally, an important activity in terms of adoption and popularization of the One Health concept is the organization of **“Community Health Days”** (CHDs), during which information was presented on subjects that were defined in consultation with the contributors (local technical services), such as hygiene (hand hygiene, food hygiene), zoonotic diseases (rabies, avian influenza) and their prevention, waste management and its impact on the environment and hygiene, management of agricultural waste (jerry cans, etc.) and others, giving rise to many discussions between villagers of different generations. The participants in these events were students, their teachers, inhabitants of the fourteen village communities, district veterinarians, representatives of the environmental protection service, municipal councilors, and management of four health centers.

2.

Multidisciplinary partnerships were key to the project’s success and to building awareness of the interdependence between human, animal and environmental health

All of the activities described could only be achieved at such a scale thanks to the various contributions of the different partners, whose effective support and collaboration were first secured through prior awareness-raising work. In terms of animal husbandry techniques and animal health, the village animal health workers (VAHW), some of which are organized within the “Baphnom Meanchey” VAHW agricultural cooperative, had been working with AVSF for several years before the start of this initiative; this partnership continued and grew stronger over the course of the project. The various local public services concerned (district veterinarians, district environmental service, health centers) were involved from the conception, and then in running the events of the Community Health Days. School teachers and the municipalities of the five communes concerned were involved in collectively identifying topics of interest during CHD events, and in conducting awareness sessions on the topics selected (prevention of rabies and other zoonotic diseases, hand hygiene, waste management, etc.). They also contributed significantly to the implementation and practical use of waste management equipment (incinerators, containers for selective waste sorting).

3.

Convincing results and enthusiastic support from the population and local authorities, who adopted the approach and are replicating it throughout the territory

According to the overall assessment, animal husbandry and animal health were improved among the participating farmers, although they faced several difficulties during the same period such as very hot temperatures and epidemics. Overall, the livestock and animal husbandry activities undertaken by the project participants have played a crucial role in generating income and supplying these families with animal protein. Farmers breed these livestock (chickens, pigs, cattle) at a family level, using the innovative techniques introduced by the project: vaccination, deworming, treatment, biosecurity measures and zoonotic disease prevention measures. As a result, **70% of the participating households have seen their income from livestock farming increase⁽⁴⁾.** For example, improved chicken breeding enabled a household to generate an additional monthly income of 142 USD/month from the 2nd year of the project. For comparison, the net monthly salary of a textile factory worker is 192 USD/month and that of an elementary school teacher is 300 USD/month. Cattle fattening generated on average between 150 and 300 USD for a 3-month production cycle (i.e. about 50 to 100 USD per month), an income that remains however very dependent on the significant fluctuations of market prices at the regional level. In addition, **the support to the Baphnom Meanchey cooperative has made it possible to strengthen a collective dynamic,** which was initially created around animal health services activities. It has diversified towards the development of agricultural and commercial activities (production of paddy rice and seeds), loans of breeding animals to members in charge of the resale of young animals (cattle and pigs), and savings and credit for members’ economic projects, allowing the cooperative to have a positive economic dynamic. Likewise, the collective commercial relationship with a local collector has made it possible to **increase the price paid to farmers by 1 USD per breeding hen compared to the usual local market price,** i.e. about 25% more.

[4] Sources: technical follow-ups, field observations and testimonies from participating families.



Example of a biosecure henhouse

More than a year after the end of the project's activities, it appears the One Health concept has been significantly adopted by participants, despite their admission of not having originally seen its value. All of the farmers interviewed readily cited zoonotic diseases (rabies, avian influenza, larval parasitosis), for which they now know the main prevention measures. In particular, concepts of biosecurity in animal husbandry are effectively applied by the farmers. On a collective level, it is very interesting to note that local authorities have also adopted the approach, taking up some of the topics discussed during the Community Health Days and making them part of long-term collective actions (see "Feedback and experiences"). Moreover, these dynamic actors, convinced by the integrated approach to health, have become spokespersons for good practices initiated in their communities in discussions on a larger scale (district level), made possible due to the highly hierarchical administrative organization of Cambodia.

Finally, in terms of strengthening bridges and links between professionals from different sectors at the local level, it is noted that human and animal health services, which acknowledge that they have never previously had the opportunity to work together, have developed the habit of regularly communicating and exchanging information when necessary on health issues raised by the population and requiring the contribution of expertise from the other party.

4.

Adoption remains highly dependent on local actors and some technical issues need further development

In addition to the concrete activities carried out, the effects of the project are noteworthy both in terms of general awareness of health issues at the interfaces between human, animal and environmental health within the population, and in terms of the adoption of the One Health concept by local authorities and services responsible for these areas, which makes it possible to break down compartmentalization between these sectors. Nevertheless, continued collective action, such as on improving environmental quality and limiting pollution, will depend on sustained, active involvement by local authorities and officials, and on their willingness to tackle these subjects and sustain them at the community level.

FEEDBACK AND EXPERIENCES

The project allowed me, through the One Health awareness sessions, to collaborate with the district veterinarian, the VAHWS and the environment office, with whom I had never had the opportunity to work before. [...] During the ASF outbreak, I was able to call the district veterinarian to learn more about the disease and whether it was transmissible to humans, and to give some advice to people who asked me questions about the disease. [...] Sometimes, it is the district veterinarian who calls me to find out about the rabies situation in the commune. And we were invited by the head of the commune to organize an awareness program jointly with the district veterinarian. [...]

The rabies awareness sessions were effective, and as there was one case in the district during the project, the health center was in great demand for post-bite treatment requests, and people were referred to the reference hospital.

— **Mr. Eang Khim**

Director of the Speu Ka Health Center

Honestly, before the project, I wasn't really aware of the problems created by plastic pollution in our environment. I realized how important it is to protect the environment and also the health of our people. Since the project, with the commune council and the village leaders I have put in place several measures to continue this effort:

- promoting awareness with commune leaders and encouraging the organization of collective waste collection operations (2 organized in the villages, and regularly at the pagoda),
 - routine waste collection at the three main markets of the commune, financed by a contribution of 1000 to 2000 riels (0.25 to 0.50 USD) from each vendor; part of the waste collected (plastic bottles) is financially recovered by reselling it to collectors,
 - inclusion of a condition for waste collection and disposal in the permits issued for community ceremonies held in the villages.
- Since we have put these measures in place, I have found that families are more aware of these issues, and respect the obligation to clean up after ceremonies. The District Governor [of Baphnom] has found these actions to be very relevant, and has encouraged other commune leaders to adopt these good practices.*

— **Mr. Neth Saruorn**

Head of Speu Ka commune

Since the Community Health Days, which engaged the school's teachers, some topics such as handwashing and garbage collection on the school grounds have been addressed with the children on a regular basis, even though they were not part of the official extension programs before.

— **Mr. Ken Bourng**

Headmaster of Prey Khnés village school





Demonstration of canine rabies vaccination during a CHD

For public health issues such as rabies prevention, success depends mainly on **the development and implementation of national policies** over which local actors have little control, which can lead to a certain frustration: the population is aware and understands the value of vaccinating dogs against rabies, but the availability of good quality vaccines and even the organization of vaccination campaigns are not guaranteed.

Likewise, some of the topics discussed still need to be explored in greater depth in order to achieve truly satisfactory results. For example, management of veterinary medical waste is limited to collecting and properly storing this waste, but disposal channels are still non-existent. Opportunities for pooling with the waste from health centers, for designated incinerators at the district reference hospital, could be considered.

Moreover, the issues related to the proper use of veterinary drugs, and in particular the risks in terms of antimicrobial resistance, although addressed and overall

understood by the VAHWs, remain poorly assimilated by livestock farmers at the local level. These topics should therefore still be the focus of growing initiatives by VAHWs to increase awareness in farmers. Beyond spreading collective awareness of risks and preventive practices, there remains the challenge of these new practices being integrated, spread and maintained, which depends largely on a collective dynamic, often driven by a few key prominent figures. Awareness of good practices and the spread of these on a larger scale should already make it possible to encourage similar initiatives in other communes.



Head office

14 avenue Berthelot (bâtiment F bis)
69007 Lyon – France
Phone +33(0)4 78 69 79 59

Branch office

45 bis avenue de la Belle Gabrielle
94736 Nogent-sur-Marne Cedex – France

www.avsf.org

Program implemented with the support of

