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Late Dr. Durga Datt Joshi, Founder of NZFHRC

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Email: ddjoshi.nzfhrc17@gmail.com, ddjoshi@healthnet.org.np

Website: www.nzfhrc.org.np

Zoonoses and Food Hygiene News, published four times a year, provides a medium for disseminating technical information on matters related to zoonoses and food hygiene generated in the world, particularly in Nepal. The editors welcome submissions on these topics with appropriate illustrations and references. The views and opinions expressed in the News are those of the authors.

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Synthesis Analysis Report on Japanese Encephalitis Project Area: Kathmandu, Morang, Rupandehi and Kapilvastu Districts of Nepal

Ms. Minu Sharma, Program Coordinator, NZFHRC

Summary

The NZFHRC has implemented the "Identification and Assessment of Socio-Environmental Risk Settings for Japanese Encephalitis (JE) Transmission and Re-emergence" project in four districts of Nepal - Kathmandu, Morang, Kapilvastu and Rupandehi. The main tasks of this 3-year IDRC funded project is to conduct a pig population survey, a pig farmer's questionnaire survey, a household survey of pig farmers and non pig farmers within the JE project area, a serological diagnosis of pig and human serum samples for JE infection, a JE case control study, an entomological survey, a socio-demographic study, and finally to disseminate an awareness program about JE among the various stakeholders. Baseline data was collected in the first year, and in the second year we conducted a health promotion-based awareness programme. To assess the effectiveness of intervention programme, a participatory synthesis workshop was conducted using Social Analysis Tools. A total of 81 participants were enrolled in the study. Information was collected using focus group discussion and wheel charts. Out of 81 participants, 75% responded that JE informative program was very effective and 25% responded that JE informative program needed improvements; 79% responded that information about pig disease seemed to be effective; 62% responded that sero-survey program was very effective while 70% participants said that vector survey was very effective. Fifty eight percent of respondents said that pig management seemed to be effective. Before conducting an intervention programme, the

knowledge of pig farmers about JEV disease was below 20%. After conducting the intervention programme, knowledge of pig farmers about pig disease peaked up to 70%. In conclusion, overall the programme seemed to be very effective and similar programmes should be conducted in others parts of country to reduce the vulnerability of Japanese encephalitis and other vector-borne disease.

Background

Starting in August 2011, the NZFHRC has been conducting an IDRC-funded research program in four districts of Nepal (Kathmandu, Morang, Kapilvastu and Rupandehi) with a focus on understanding socio-environmental risk settings for JE transmission and re-emergence in Nepalese pig farming communities. Synthesis workshop provided an opportunity to better understand the effectiveness and impact of this project. The main intervention programs are a pig population survey, a pig farmer's questionnaire survey, a household survey of pig farmers and non pig farmers within the JE project area, a serological diagnosis of pig and human serum samples for JE infection, a JE case control study, an entomological survey, a socio-demographic study, and finally to disseminate an awareness program about JE among the various stakeholders. The symposium was organized and run in all the project areas, and included 81 participants from the pig farming community. Questionnaires and checklists for discussion purposes, and SAS tools for analysis, were used during this symposium.

One of the primary objectives was to map, synthesize and document effective activities related to pig health, pig husbandry and JE knowledge dissemination, as related to this IDRC project.

Methodology

The series of synthesis analysis workshops were conducted using participatory methods and social analysis tools, with focus group discussions. The workshops were designed in such a way that the strategy and methods for mapping, synthesizing information, and documenting information as to the most relevant outcome of the project was well internalized and owned by the stakeholders. The methodology designed was summarized in figure 1.



Skill Profile Card: The Wheel developed by the participants in Morang district.

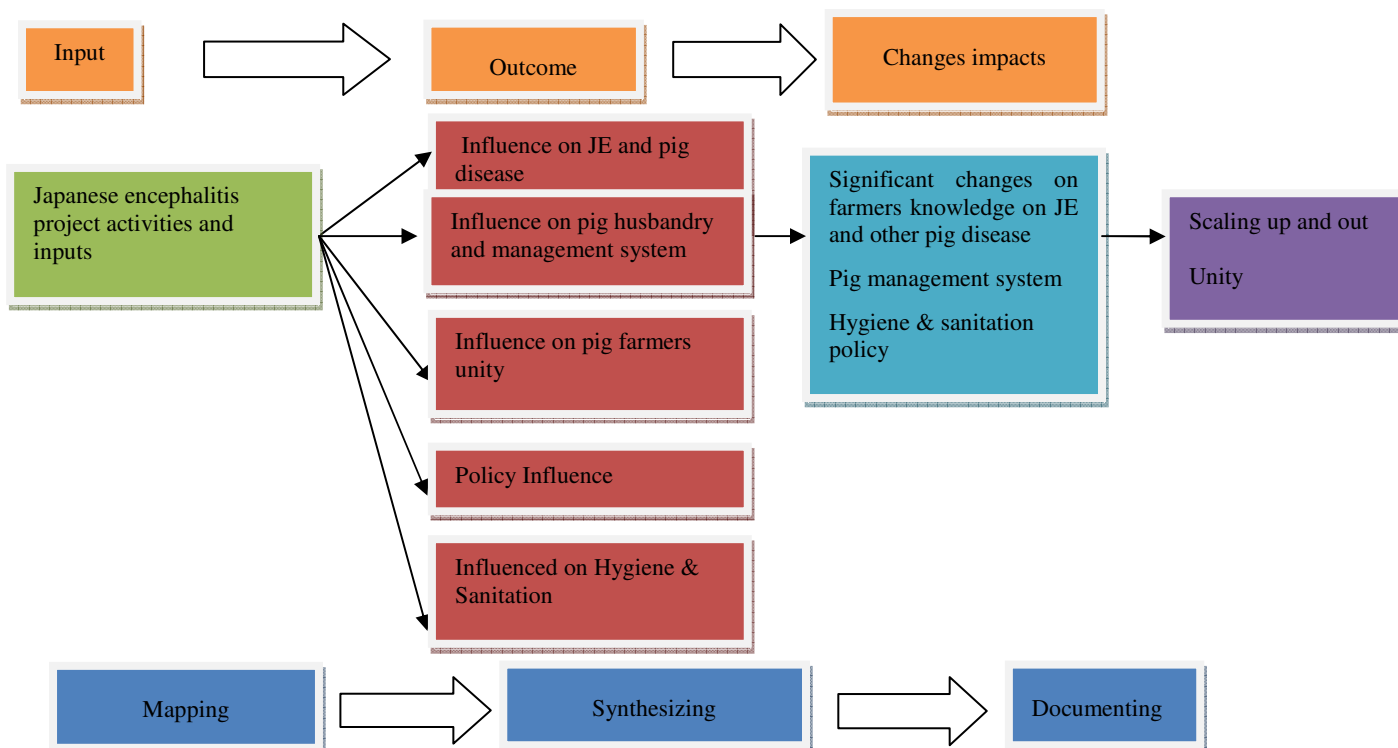


Figure 1: Design framework for Synthesis

Tool and checklist to carry out synthesis and documentation

Force Field: Through this tool it helped to understand the stakeholders view on the factors that cause the problem and those that are supported by project to counteract the problems and stop it from becoming worse. It will help in assessing whether the proposed activities are sufficient enough to address the problem or not.



Force field developed by participants in Kapilvastu district.

Skill Profile Card: The Wheel: We used this "Skill profile card: The wheel" to rate participant participatory and action learning skills. Record each rating by placing a mark along the corresponding line in the wheel. Then draw straight lines between the marks participant have made on each line to create a shape that defines participant overall profile.

Evaluation tool was used: All project area, participants were divided in two groups and each group start identified major effective activities in their community, or occupation. They discussed among

the group and rating on the major activities, mainly participants focused on:

- I. Information sharing about Japanese Encephalitis
- II. Information about pig related disease
- III. Information about the pig management system
- IV. Pig blood collection (serology test) and
- V. Mosquito collection.

Table 1: Major changes/impact and the indicators identified by stakeholder

Activities	Outputs	Indicators
Awareness Program run among different stakeholder like, Pig farmer, student, teacher and Para-veterinarian	Able to understand how JE transmit	Knowledge upgraded among stakeholders
JE ELISA training provided to the hospital lab technician	Lab Technician are trained on JE ELISA	To enhance the laboratory skill of technologist
Provided training on pig husbandry and management training to pig farmers	Pig farmers were benefited and gen knowledge about modern pig farming system	Pig farmers are started built modern/systematic pig farm
Pre and post vector collection	Found Culex tritaeniorhynchus in all project area	All project area people are under JE risk
Awareness on hygiene & sanitation	Farmer started keeping farm inside and outside	Environment protection
Awareness class on pig disease	Pig farmers are aware on what kind of sine and symptom sign when pig & piglet became sick	Able to identify pig disease

Gender training	Developed women's capacity to take care of money	Became powerful in family
Worm medicine distribution for pigs	Farmers were aware about pig worm disease	Help to control pig worm diseases
Provided Free test for JE suspected case in human	Free Japanese Encephalitis ELISA test facility provide hospital admitted suspected patients	Help to JE diagnosis fast

5. Many pig farmers did not have access to latrines prior to this project, but are now beginning to construct safe latrines.

Major outcomes of the project

Stakeholders from all four project regions agreed that the major outcome of the project has been to improve pig health, policy, land use, capacity building, training and social change. Participants have identified barriers for pig farming, and are starting to recognize possible solutions. However, with regards to government support, in every project area pig farmers felt that the government always ranks them low compared to other livestock rearing occupations. Stakeholders strongly perceive that due to this project, their overall awareness and knowledge about pig management, pig disease and management skills have improved, with an increase in their health consciousness towards both humans and pigs. Sanitation conditions have been improved, more modern pig farms are being started, closer ties between the District Livestock Service and pig farmers in all project areas have been initiated, and gender training has improved the status of women within their households. Major changes were also reported by the pig farmers on institutional strengthening, internal governance of the pig farmers, empowerment of vulnerable and marginalized community (Marick, Dalit, etc.).

JE awareness programs have been conducted among the different stakeholder groups in each of the four study districts. The target groups were Para Veterinarians (JTA), Pig farmers, Non pig farmers and Teachers. All of the JTA (100%) and 13 (72%) non pig farmers had heard about JE, with 54% of the school teachers and 43.5% of the pig farmers indicating that they had heard about JE. The literacy rate may be an important reason for these differences. Those stakeholders who knew about JE had heard it from the media. The media seemed to be effective source of information. None of the stakeholders were vaccinated against JE and none had any symptoms of Japanese encephalitis.

Out of 81 participants, 75% responded that the JE informative program was very effective and 25% responded that JE informative program needed improvements; 79% responded that information about pig disease seemed to be effective; 62% responded that sero-survey program was very effective while 70% participants said that vector survey was very effective. Fifty eight percent of respondents said that pig management seemed to be effective. Before conducting intervention programmes, the knowledge of pig farmers about JEV disease was below 20%. After conducting the intervention programme, knowledge of pig farmers about pig disease peaked up to 70%.



Participant presenting outcome of the project in Rupandehi district.



Time line developed by the participants in the Kathmandu district

Lesson learned from the Japanese Encephalitis project

This project has brought about visible changes in pig farmer's attitudes towards JE in Kathmandu, Morang, Rupandehi and Kapilvastu, with the following highlights:

1. An increase in knowledge and awareness about JE. Before the project was implemented, knowledge on pig diseases and JE in the project areas was below 20%; this has now increased up to 70%.
2. They learned about the Japanese Encephalitis disease and its life cycle.

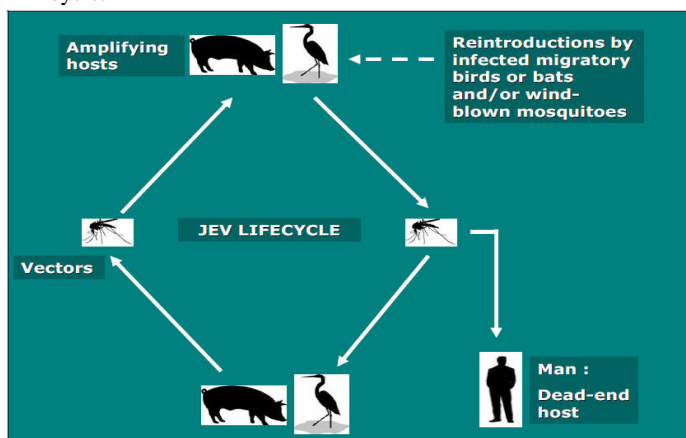


Figure 1: Japanese Encephalitis Virus Life-Cycle

3. Before the project was initiated, pig farmers did not have access to vocational training despite being the major workforce in those areas. Now, farmers are beginning to improve their farming patterns, especially in the fields of sanitation and hygiene.
4. Gender training has developed women's capacity to manage income and money, giving them greater power in their family.

Conclusion

This synthesis workshop helped to systematically analyze the activities, outcomes and lessons learned from the first 2 years of this project. We found that the pig farming sub-population of Kathmandu, Morang, Rupandehi and Kapilvastu districts had low levels of awareness of pig borne zoonosis and Japanese encephalitis disease, and we had the opportunity to improve the knowledge base. Overall, this program seemed to show promising results, and we would like to see similar work done with pig farmers in others parts of Nepal to help reduce the vulnerability of Japanese encephalitis and other vector-borne disease.

NEWS

Ms. Minu Sharma, Program Coordinator and Mr. Dhan Kumar Pant, Microbiologist participated on the 14th World Congress on Public Health which was hosted in Kolkata, India from 11-15 February 2015. The Congress aimed towards fostering the promotion of "Healthy People – Healthy Environment" and brings together thousands of participants from a wide range of public health disciplines from many countries around the world. The 14th World Congress on Public Health hosted jointly by the World Federation of Public Health Associations (WFPHA) and the Indian Public Health Association (IPHA).

KDMA Research Award Awarded for the year 2014:

KDMA research award for the year 2071 B.S. (2014) was awarded to Mr. Dhan Kumar Pant for his research work entitled "The Incidence of Allergic Reactions to Contrast media in CT-Scan".

DDJ Research Award

Dr. Durga Datt Joshi was Founder and Executive Chairman of National Zoonoses and Food Hygiene Research Centre (NZFHRC), Kaushila Devi Memorial Allergy (KDMA) Trust and Durga Datt Joshi (DDJ) Research Foundation. He was deceased unexpectedly on 25 November 2013. It is irreparable loss for our centre, country and globe due to his untimely demise. His contribution on zoonotic diseases and research field will be memorable forever.

Late Dr. Joshi, WHO Expert Advisory Panel Member on Zoonoses served more than three decades in the government sector as a

different position. He served as a Chief, Zoonotic Diseases Control Section, Epidemiology and Statistics Division, Department of Health, HMG, Nepal from 1979 to 1986. Similarly, he worked as an Acting Chief, Epidemiologist, Epidemiology and Statistics Division, Ministry of Health, from November 1981 to 1986. Dr. Joshi worked as a Member - Secretary, Nepal Medical Research Committee, Ministry of Health, HMG, Nepal in 1982-1987. He worked as General Manager, Dairy Development Corporation Nepal From 1987 to 1990. He worked as Director, National Agriculture Research Council, Ministry of Agriculture from 1990 July to February 1991. He worked as an Executive Director and Member Secretary, National Dairy Development Board, Ministry of Agriculture from November 1991 to September 1994. He worked as a Chairman Nepal Veterinary Council, Ministry of Agriculture His Majesty's Government of Nepal from 2000 to 2005.

On the memory of Late Dr. Durga Datt Joshi, board of directorate of DDJ Research Foundation announces annual DDJ Research Award to individual/ group of researchers for their outstanding research work on zoonotic diseases in Nepal from 2015 onwards. DDJ Research Foundation will accept research reports from 1st October to the end of the October of each year. The awardee will be announced on 10th November and the research award will be awarded to the selected researcher on the 25th November of each year on the day of his untimely demise.

Please kindly submit your research work report on zoonotic diseases for to consideration of DDJ Research award for the year 2015 by the end of October 2015 to NZFHRC office Chagal, G.P.O. Box 1885, Kathmandu, Nepal, Phone: 4270667, 4274928 and Fax 4272694. This award was established by DDJ Research Foundation in 2071 B.S. (2014) on the memory of Founder of this Foundation, Late, Dr. D.D. Joshi. The award includes a grant of NCRs. 25,001/- (Rs. Twenty Five Thousand and One) with certificate.

K.D.M.A. Research Award:

Please kindly submit your research work paper on allergy award for the year 2015 for the consideration by the end of July 2015 to KDMART office Chagal, G.P.O. Box 1885, Kathmandu, Nepal, Phone: 4270667, 4274928 and Fax 4272694. This award was established by Late Dr. Durga Datt Joshi in 2049 B.S. (1992) on the memory of his wife, the late Mrs. Kaushilya Devi Joshi. The award includes a grant of NCRs. 15,001/- (Rs. Fifteen Thousand and One) with certificate.

**From: Zoonoses & Food Hygiene News, NZFHRC
P.O. Box 1885, Chagal, Kathmandu, Nepal.**

TO:

Dr/Mr/Ms

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