Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by India Office/ March, 2014

Country Name	Project for Prevention of Diarrheal Diseases (Phase2)
India	

I. Project Outline

Background	In India, the first cause of infant death was acute diarrheal disorder caused by impure water. The government of India developed a policy to tackle this issue, and implemented the Phase 1 of this project with the aims of establishing countermeasures for diarrheal diseases including a fostering plan of the human resources necessary for molecular biology/epidemiology, developing research facilities and promoting collaborative research, making the National Institute of Cholera and Enteric Diseases (NICED) as the implementing organization. As a result of the 5-year implementation of the Phase 1, the foundation was mostly established for the government of India to implement vaccine trials for cholera. However, there were other fields of research for which further technical transfer was required. Under such circumstances, this technical cooperation project and a grant aid project were officially requested.		
Objectives of the Project	1. Overall Goal: Capacities of medical institutions in India to prevent diarrheal diseases will be improved. 2. Project Purpose: To strengthen capacities and augment capabilities at NICED and to disseminate the improved techniques throughout the country for prevention and control of diarrheal diseases. 3. Assumed steps for achieving the project goals[1]: The project implements research on diarrheal diseases applying molecular biological techniques at NICED so that it could identify more kinds of diarrheal pathogens and produce more research outcomes. At the same time, NICED trains Indian and foreign doctors/scientists and sets up the constant surveillance network under this project, so that more medical institutions would apply molecular biological techniques and share information on disease case among networked institutions, first in West Bengal and then in the whole India, which are expected to lead to more accurate/reproducible diagnosis of diarrheal diseases in India.		
Activities of the project	1. Project site: Kolkata, West Bengal 2. Main activities: Laboratory research/test at NICED, production and management of diagnostic antisera, creation of surveillance network for pathogens, and training for doctors and scientists of relevant hospitals and neighbouring countries. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 44 persons 2) Trainees received: 18 persons 3) Third-country training and in-country training: total 155 (out of which 43 persons were from 12 countries) 4) Equipment: Laboratory equipment 5) Others: Training cost India Side 1. Staff allocated: 10 persons 2. Office and facilities/equipment of NICED 3. Others: Budget from NICED		
Project Period	July 2003 to June 2008	Project Cost	274 million yen
Implementing Agency	National Institute of Cholera and Enteric Diseases (NICED) under the Indian Council of Medical Research (ICMR)		
Cooperation Agency in Japan	National Institute of Infectious Diseases, International Medical Center of Japan, Osaka Prefecture University, Okayama University of Science, Sapporo Medical University		
Related Projects (if any)	Japan's cooperation: Project for Construction of Diarrheal Research and Control Centre (Grant Aid, 2004-2006); The Project for Prevention of Emerging Diarrheal Diseases (Phase 1 of this project) (Technical Cooperation, 1998-2003). Other donors' cooperation: Integrated Disease Surveillance Program (World Bank); training for NICED (WHO), provision of ORS (UNICEF); PHC (USAID and UNICEF), etc.		

II. Result of the Evaluation

1 Relevance

This project has been highly relevant with India's development policy "reduction of mortality rate caused by diarrheal diseases" as set in policy documents including the National Health Policy (2002) and the 11th 5 year plan (2007-2012), development needs "establishing countermeasures for diarrheal diseases including through molecular biology/epidemiology, developing research facilities and promoting collaborative research as well as development of surveillance", and Japan's ODA policy, including JICA country Program for India (2002) and a series of policy dialogue between Japan and India (such as the economic cooperation policy dialogue mission in March 2002) and the Okinawa Infections Diseases Initiative (2000) at the time

[1] Reviewed at the time of the ex-post evaluation.

of both ex-ante evaluation and project completion. Therefore, relevance of this project is high.

2 Effectiveness/Impact

This project introduced to NICED new molecular biological techniques for analyzing pathogens such as polymerase chain reaction (PCR, RT-PCR), analysis of DNA base sequence, pulse-field gel electrophoresis (PFGE), gene cloning and ribotyping, with the new laboratory facilities constructed under the grant aid project of "Project for Construction of Diarrheal Research and Control Centre". As a result, the first project purpose of strengthening of capabilities of NICED was achieved, and the scale and variety of laboratory and research activities, including the number of cases examined/identified, the number of publications, the number of antisera produced, etc. have been maintained or expanded at the time of this ex-post evaluation. Permanent or regular joint research collaborations in relevant fields with research institutions in Japan also show the high capabilities of NICED.

The second project purpose of disseminating molecular biological techniques to other organizations was sufficiently achieved. From 2000 to 2007, 8 in-country training programs were conducted and 118 scientists from leading diarrheal research institutes in India were trained. After conducting training, NICED has been following up with the participating institutes in order to ensure sustainability of the training outcomes. For example, some of the trained researchers conducted trainings for other institutes in their respective regions. Further, NICED has been contributing to present new identification methods of pathogens for many laboratories because the Integrated disease surveillance program (IDSP) funded by the World Bank requires to screen the sample/strains using the molecular techniques. As a result, at the time of ex-post evaluation, the increased number of research institutions that are capable of identifying diarrheal pathogens at the molecular level was observed (see the table below for the details).

For the overall goal of improving capacity of medical institutions in India, the networked centers improved the quality of diarrheal disease diagnosis and surveillance after the training organized by the project. Many of research institutions are enrolled in the External Quality Assurance System (EQAS) [3]. NICED assists the EQAS as a main contributing institute in India and through this network, NICED has supported other institutions to ensure quality of diagnosis and research for the participating institutes by applying the in-country training programs organized by NICED and JICA. Each diarrheal case is confirmed within the network by several laboratory tests which cover about 30 enteric pathogens using different methods including molecular based techniques.

Positive impact is observed that NICED has responded to outbreaks of cholera/diarrheal diseases in India and sometimes in other countries (e.g. Zanzibar and Haiti) by dispatching its scientists for investigation. Also, rewarded for the scientific contributions and number of publications, three of NICED's scientists were placed in top 20 experts in the ICMR's "Expert finding system".

Therefore, effectiveness/ impact is high.

Achievement of project purpose and overall goal

Aim	Indicators	Results
(Project Purpose) (1) Strengthen capacities and augment capabilities at NICED.	No. of kinds of species and subspecies of diarrheal pathogens that could be identified at NICED is higher than that of 2003	(Project Completion) (Ex-post Evaluation) Increased. No. of kinds of diarrheal pathogens identified at NICED 2003: 5 / 2007: 6 / 2008: 27 / 2009: 27 / 2010: 27 / 2011: 27 / 2012: 27 Note:The number does not include some pathogens.
	No. of publication produced by NICED scientists	(Project completion) (Ex-post Evaluation) Increased. 2003: 38 / 2007: 47 / 2008: 63 / 2009: 62 / 2010: 88 / 2011: 89 / 2012: 69
	Average impact factor(*) of the publication produced by NICED scientists is higher than that of 2003	(Project completion) (Ex-post Evaluation) Increased. 2003: 2.1 / 2007: 2.56 / 2008: 3.46 / 2009: 4.75 / 2010: 3.06 / 2011: 3.06 / 2012: 3.37
(2) Disseminate the techniques throughout the country for prevention and control of diarrheal diseases.	No. of research institutions that are capable of identifying diarrheal pathogens at the molecular level	(Project completion) (Ex-post Evaluation) Increased. 2003: 4 / 2007: 40 / 2008: 48 / 2009: 53 / 2010: 55 / 2011: 58 / 2012: 61
(Overall goal) Capacities of medical institutions in India to prevent diarrheal diseases will be improved.	Results of reproducibility tests of the networked centers are higher than that of 2003	(Ex-post Evaluation) Many research organizations in India are now enrolled in the External Quality Assurance System in which reproducibility testing is conducted. NICED contributes technically as one of the main research institutes and the net worked centers improved the quality of diarrheal disease diagnosis and surveillance.

Source : Project Completion Report, Interviews with counterparts

Note: (*) Impact factor is a measure reflecting the average number of citations to recent articles published in the journal.

3 Efficiency

While the inputs were mostly appropriate for producing the outputs of the project, and the project period was within the plan (ratio against the plan: 100%), the project cost slightly exceeded the plan (ratio against the plan: 110%) due to increase in the number of trainees and training cost. Therefore, efficiency of the project is fair.

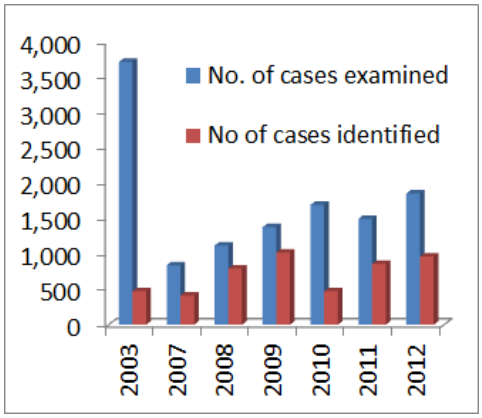
[3] External Quality Assurance System is a worldwide laboratory quality control system maintained by WHO Collaborating Centre – Antimicrobial resistance, the National Food Institute, Denmark.

4 Sustainability
In the policy aspect, this project is still given importance in the current development policy as the 12th five year plan (2012-17) proposes to establish a network of laboratories across the country with capacity to handle all human pathogenic viruses as well as emerging-reemerging viral diseases and to develop tools for prevention. Institutionally, the organizational setting of NICED as a Center of Excellence of ICMR is appropriate for continuing its research and training activities and no problem was observed in the number and qualification of staffs. The surveillance network of medical institutions is also maintained while NICED still have tried to expand the surveillance network as far as possible by utilizing the focal persons of each research institutes trained by the project. As for the technical aspect, the high technical level of NICED is shown in "2 Effectiveness/Impact". The ex-counterpart and ex-trainees of this project keep working for NICED as there is no drain of the researchers after completion of the project. Also, the technical staffs are trained to carry out the routine work and getting additional training whenever they undertake a new allocation of work. In the financial aspect, the budget of NICED comes from ICMR under the direct fund of the Central Government. While the NICED's training activities had been scaled down due to availability of funds for training, NICED obtains budget that is mostly sufficient as per its budget planning. From these findings, it is considered that the project has no severe issues in each aspect of the implementing agency therefore, sustainability of effectiveness of the project is high.
5 Summary of the Evaluation
This project has achieved the project purposes and overall goal. For the first project purpose, strengthening of capabilities of NICED, it became able to identify more kinds of diarrheal pathogens using molecular biological techniques. For the second project purpose of disseminating molecular biological techniques to other organizations, the number of institutions capable of identifying diarrheal pathogens at the molecular level increased. For the overall goal of improving capacity of medical institutions in India, the networked centers improved the quality of diarrheal disease diagnosis. As for sustainability, no problem was found as this project is still given importance in the current development policy, and NICED has secured sufficient human and financial resources as a Center of Excellence of ICMR. For efficiency, the project cost slightly exceeded the plan. In the light of above, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing agency:
-A recommendation to the implementing agency is to continue efforts in establishing the National Surveillance Network as NICED researchers are aware of more integrated research activities and advocacy efforts of the different research institutes. Consolidated policy together with experts in Health Policy Strengthening is one of the strategies to involve the central government support and thus promote the foundation of the network.

Lessons learned for JICA
-This project is a good example of the greater effects of technical cooperation and grant aid (facility development). The grant aid and technical cooperation (phase 2) projects were planned and implemented at the same time. The establishment of the new laboratory facilities of grant aid and the introduction of new molecular biological techniques by this technical cooperation resulted in strengthening capabilities of NICED. Therefore, this project, the second phase of the technical cooperation project, maximized its effects when the research facility through grant aid was incorporated. Moreover, it is assumed that planning both grant aid and technical cooperation together at the initial stage, as seen in this case, could be also a factor that led to the good collaboration of the two projects consequently.



Source: NICED

Number of diarrheal disease cases diagnosed at the molecular level at NICED

Note: a very large number of cases examined in 2003 is due to use of a different pathogen identification method than that of thereafter.