Federal Republic of Nigeria

FY2019 Ex-Post Evaluation of Japanese ODA Loan Project

"Polio Eradication Project"

External Evaluator: Eriko Yamashita, Value Frontier Co., Ltd.

## 0. Summary

The objective of the "Polio[1] Eradication Project" (hereinafter referred as "the Project") was to optimize administration of the polio vaccine to children under five years, by procuring oral polio vaccines (OPV) necessary to implement polio immunization campaigns (hereinafter referred as "Campaign/s") in 2014 and 2015, thereby contributing to the early eradication of polio in the whole country. Nigeria was one of the three polio-endemic countries at the time of appraisal, and the international community had positioned Nigeria as the most prioritized country for polio eradication. Polio eradication was also positioned as an emergency and a priority issue by the Federal Government of Nigeria (FGN), and the Project is consistent with the national development plans and the development needs. Furthermore, the Project was consistent with Japan's Official Development Assistance (ODA) policies that have demonstrated strong commitment toward the health sector in the international arena. Therefore, its relevance is high. The Project cost was within the plan and the Project period was as planned and accordingly the efficiency is high. All of the operation and effect indicators set up for the Project were achieved, including immunization coverage. Consequently, impact was confirmed in the controlled number of wild poliovirus (WPV) cases after 2014, and no case of WPV has been reported since 2017. Therefore, effectiveness and impacts are high. Regarding sustainability, there are no major issues in the implementation of the Campaigns in the institutional/organizational, technical, and financial aspects: the Campaigns are implemented in accordance with the plan. Meanwhile, future polio eradication activities are planned for integration into the routine immunization (hereinafter referred as to "RI") framework. The institutional framework of RI is not yet well established, and detailed activities to implement the transition plan are under discussion at the time of ex-post evaluation, hence there is uncertainty in institutional/organizational, technical, and financial aspects of the transition plan implementation. Therefore, sustainability is fair.

In light of the above, this project is evaluated to be highly satisfactory.

[1] Polio (poliomyelitis) is a communicable disease and can infect a person's spinal cord, causing paralysis of the limbs. The poliovirus enters the body through the mouth; it spreads from person to person mainly through the fecal-oral route. The global polio epidemic has been caused by WPV. It is a vaccine-preventable disease and on the verge of being eradicated worldwide, after smallpox. At the time of appraisal (2014), Nigeria, Afghanistan, and Pakistan were the remaining three polio-endemic countries in the world. OPV are recommended to prevent polio in the polio-endemic countries, but in rare circumstances, they can induce spontaneous mutation of the strain contained within OPV to generate the circulating vaccine-derived poliovirus. (This is the evaluator's edition, based on published medical documents and sources including websites of Japan's National Institute of Infectious Diseases, the Global Polio Eradication Initiative, and Rotary International.)

## 1. Project Description


Project Location

Polio Gwoza
(Photo Source/Credit to *UNICEF Nigeria/2016*)

### 1.1 Background

Statistics show that the number of reported polio infections globally decreased 99% from 1988 to 2012, with complete eradication a step away. At the time of appraisal, Nigeria, as one of the remaining three "polio-endemic countries" in the world, was given the highest priority in respect of polio eradication activities on a global scale. Under the Global Polio Eradication Initiative (GPEI), in addition to RIs, Nigeria had been implementing Campaigns, also called Supplementary Immunization Activities, six to eight times a year on a national or sub-national level depending on the situation, targeting children aged under five. However, it had not been able to ensure financial support from international donors for the procurement of polio vaccines that were necessary to implement the Campaigns in 2014 and 2015, specifically for the vaccines necessary for the Campaigns after May 2014. Thus, there was a huge concern over the continued implementation of Campaigns.

### 1.2 Project Outline

The objective of the Project was to optimize administration of the polio vaccine to children under five years, by providing a loan for procuring polio vaccines necessary to implement the Campaigns in 2014 and 2015, thereby contributing to the early eradication of polio in the whole country.

<ODA Loan Project>

| | | |
|---|---|---|
| Loan Approved Amount/ Disbursed Amount | 8,285 million yen / 8,269 million yen | |
| Exchange of Notes Date/ Loan Agreement Signing Date | May 2014 / May 2014 | |
| Terms and Conditions | Interest Rate | 0.2% |
| | Repayment Period (Grace Period | 20 years 6 years) |
| | Conditions for | General Untied |

| | |
|---|---|
| | Procurement |
| Borrower / Executing Agency | Federal Republic of Nigeria / National Primary Health Care Development Agency (NPHCDA) |
| Project Completion | December 2015 |
| Target Area | Whole country |
| Main Contractor(s) (Over 1 billion yen) | (Direct Contract for Procurement) United Nations Children's Fund (UNICEF) |
| Main Consultant(s) (Over 100 million yen) | Not available |
| Related Studies (Feasibility Studies, etc.) | Not available |
| Related Projects | Technical Assistance Project Related to ODA Loan "Laboratory Equipment Maintenance Training" (2015), Grant Project "Project for Infectious Diseases Prevention for Children" (2000), Technical Training in Japan ("The Knowledge Co-Creation Programme") "Laboratory Diagnosis Techniques for the Control of Vaccine Preventable Diseases, including Poliomyelitis and Measles" (2007– ):<br>Global Polio Eradication Initiative:<br>The World Bank (WB) "Partnership for Polio Eradication" (2003), "Polio Eradication Support" (2012), "Polio Eradication Support: additional financing" (2018) |

## 2. Outline of the Evaluation Study

2.1 External Evaluator

Eriko Yamashita, Value Frontier Co., Ltd.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October 2019 – October 2020

Duration of the Field Study: December 8, 2019 – December 21, 2019

2.3 Constraints during the Evaluation Study

The evaluator faced mobility restrictions in Nigeria following Japan International Cooperation Agency's (JICA's) local safety regulations, and hence, it was planned that the beneficiary survey would be conducted by the local consultant after the evaluator's first field study that ended on December 21, 2019. However, that proved to be impossible due to an outbreak of Lassa fever in the country in January 2020. Consequently, it was not possible to collect information and analyze the Project impacts on beneficiaries, for the section "Other impacts." Furthermore, the evaluator's

second field study, scheduled for March 2020, was cancelled due to the COVID-19 pandemic, which also limited the local consultant's mobility due to the lockdown measures in the country's capital. As a result, discussions with the executing agency were conducted mainly in writing.

## 3. Results of the Evaluation (Overall Rating: A[2])

### 3.1 Relevance (Rating: ③[3])

#### 3.1.1 Consistency with the Development Plan of Nigeria

At the time of appraisal (2014), prioritized areas under the national development plan, *Nigeria Vision 20: 2020 (2009–2020)*, embraced reduction in communicable diseases including polio to guarantee the well-being and productivity of the people. In particular, polio was made into one of the most prioritized issues of the country—the *Nigeria Polio Eradication Emergency Plan* has been elaborated every year 2011 onward, with the aim of interrupting WPV transmission by 2015.

At the time of ex-post evaluation, in addition to the above-mentioned national development plan, the *Economic Recovery and Growth Plan (2017–2020)* is also in effect, and it upholds ramping up of projects to eradicate polio, measles, and yellow fever as one of the main Programmes in the health sector. Additionally, the *National Action Plan for Health Security 2018–2022* underlines the importance of the role of polio resources, and that the capacities and assets developed through polio eradication efforts in coordination with international donors should be leveraged to ensure development of sustainable capacity for communicable diseases in general. The *Nigeria Polio Eradication Emergency Plan (2019)* emphasizes the importance of sustaining polio eradication activities.

#### 3.1.2 Consistency with the Development Needs of Nigeria

At the time of appraisal, Nigeria was one of the three polio-endemic countries in the world with continuous transmission of WPV, and was positioned as the prioritized country for polio eradication activities by the international community. Despite a trend of decrease until 2009, the number of WPV cases in Nigeria increased after 2010; in 2012, 122 WPV cases were reported, which accounted for approximately half of all the cases worldwide. It was considered that the increase in the number of WPV cases in 2012 was because the implementation of Campaigns became difficult in the north-eastern region due to the deteriorating safety situation there, especially in the three states of Borno, Yobe, and Kano. Moreover, a devastating flood in 2012 caused large-scale population migration. All this contributed to the spread of infections; hence, intensifying Campaign strategies for the north-eastern region, with a special focus on the three

[2] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[3] ③: High, ②: Fair, ①: Low

states, was necessary, besides ensuring the Campaigns' implementation with continuous quality improvement. However, Nigeria had not been able to obtain funds from international donors to meet the financial requirement for procuring the polio vaccines necessary for the Campaigns after May 2014 thus putting a critical risk over their continued implementation of Campaigns.

At the time of ex-post evaluation, WPV has not been reported after the last case in August 2016. The African Regional Certification Commission (ARCC) of the World Health Organization (WHO) granted Nigeria polio-free[4] status in June 2020 and declared in August 2020 that the WHO African Region is free of WPV. On the other hand, circulating vaccine-derived poliovirus (cVDPV) cases have been continuously reported—34 cVDPV cases in 2018 and 18 cVDPV cases in 2019. This implies that areas with insufficient immunization coverage of polio vaccines, or possibly areas with insufficient immunity obtained, still remain; therefore, it is necessary to continuously aim high immunization coverage of polio.

3.1.3 Consistency with Japan's ODA Policy

At the time of appraisal, Japan had continually shown a strong commitment toward the health sector in the international arena. At the United Nations Summit on the Millennium Development Goals held in September 2010, Japan announced its contribution of USD five billion to support the health sector. The Project came under Japan's Assistance Package for Africa, "Financial Support of 50 Billion Yen to the Health Sector," included in the category "V. Creating an Inclusive Society for Growth," in the *Yokohama Action Plan 2013–2017*, adopted by the Fifth Tokyo International Conference on African Development (TICAD V) held in 2013. The *ODA Charter (2003)*, as the policy at the time of appraisal, asserted that Japan would give high priority to providing assistance to the healthcare sector under one of the priority issues, "Poverty Reduction." The *ODA mid-term policies (2004)* also emphasized the importance of assistance to improve health services and addressing infectious diseases as an important perspective of human security and as an approach to poverty reduction. The *Country Assistance Policy for Nigeria (2012)*, under the pillar of "Poverty reduction and regional development," stated that it would assist in improving health and medical systems, including eradication of polio, whose incidence was mainly found in the northern area. In the *Rolling Plan for Nigeria (2012)*, a priority area of "achievement of growth that will benefit the entire population" included assisting Nigeria's polio eradication efforts in collaboration with international donors in the country.

Thus, this Project has been highly relevant to Nigeria's development plans and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

[4] In addition to the presence of high-quality, certification-standard surveillance and the containment of all WPV stocks in laboratories, the country needs to be rid of WPV for a period of at least three years to be certified polio-free. The cVDPV cases do not affect the certification process.

## 3.2 Efficiency (Rating: ③)

### 3.2.1 Project Outputs

The planned output of the Project at the time of appraisal was procurement of polio vaccines necessary for the Campaigns planned for 2014 and 2015 (9 Campaigns in 2014 and 7 Campaigns in 2015)—the plan was to procure a total of 676 million doses, of which the Project's yen loan would finance approximately 476 million doses necessary for the Campaigns after May 2014[5].

As actual output, 451 million doses[6] of polio vaccines were procured through the yen loan for the Campaigns implemented in 2014 and 2015 (9 Campaigns in 2014 and 8 Campaigns in 2015). In the appraisal plan, procurement of polio vaccines utilizing the yen loan was planned to support the Campaign in July 2014 and all the subsequent Campaigns in 2014 and 2015. However, based on the actual situation of the WB loan utilization and periodic revision of the Campaign plan, the yen loan actually financed the polio vaccines procurement for the Campaign in December 2014 and onward. This resulted in a loan surplus—in September 2015, JICA approved utilization of the yen loan surplus for polio vaccine procurement necessary for any Campaign in and after 2016. Consequently, after the completion of the Project in December 2015, approximately 12 million additional doses of polio vaccines were procured with the remaining yen loan for the Campaigns implemented during 2016 and 2017. Hence, the total number of polio vaccines procured with the yen loan is 463 million doses (97.2% of the planned). The reduction in the total number of polio vaccine doses procured is mainly due to adjustment made in accordance with the periodically revised Campaign plan during 2014 and 2015, which did not affect achievement of the Project objective to provide with the fund for vaccine procurement necessary for the implementation of the Campaign; therefore, the output change is judged appropriate.

### 3.2.2 Project Inputs

#### 3.2.2.1 Project Cost

The planned total cost of the Project at the time of appraisal was 11,844 million yen from three financial sources—8,285 million yen from the yen loan, an amount corresponding to 2,588 million yen from WB, and an amount corresponding to 971 million yen from FGN.

It was not possible to confirm the actual total cost of the Project because the evaluator was not able to ascertain the actual cost borne by WB and FGN during the Project period[7].

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[5] It was planned that the procurement of polio vaccines necessary until May 2014 would be financed by WB, which had been providing loans for Nigeria's polio vaccine procurement prior to the Project.

[6] The written number of the procured doses is, to be exact, the total number of doses procured during the procurement contract period established at the time of the yen loan disbursement, and the evaluator calculated the related numbers based on the Fund Utilization Reports and Statements of Account issued by UNICEF (the latter is issued for each procurement lot).

[7] WB financed polio vaccine procurement for the Campaigns between May 2014 and December 2014, but the evaluator was not able to obtain information of its actual cost specifically during the Project period. FGN bore the financial burden for the related administration cost after the vaccine was procured and until its utilization, such as the transportation cost of the vaccine to the cold chain stores and the cost of packing necessary as a preparative procedure

Meanwhile, the actual cost financed by the yen loan was 8,269 million yen and it was 99.8% of the planned yen loan cost in the appraisal; The yen loan cost incurred until the completion of the Project (December 2015), was 97.5% of the total yen loan amount disbursed, and it was within the plan.

3.2.2.2 Project Period

The planned Project period, at the time of appraisal, was 20 months, from May 2014 (signing of the Loan Agreement) to December 2015 (completion of all Campaigns in 2015), and the actual period was as planned.

The Project was formulated to fill in the financial gap required for implementing all the Campaigns in 2014 and 2015—accordingly, it was completed by financing the polio vaccine procurement necessary until completion of all Campaigns in 2015. Although the yen loan surplus was utilized for the Campaigns in 2016 and 2017, there was no agreement record on the change in the Project completion definition. Therefore, this ex-post evaluation positions the expenditure incurred in 2016 onward[8] as the expenditure for supporting activities to strengthen the sustainability of the completed Project.

The polio vaccine procurement cost makes up to 40%, at maximum, of the total cost necessary for implementing Campaigns. According to the interviews conducted with NPHCDA and international donors, assured funding by the Project covering all Campaigns until the end of 2015 allowed introduction of innovative approaches in 2014 and 2015, including the *Hit & Run*[9] approach, scaling up of outside household vaccination, and vaccination at transit sites such as markets and internally-displaced-persons camps for children without a fixed residence. Furthermore, it allowed enhancement of Campaign implementation in high-risk polio transmission areas where Campaigns had not been carried out sufficiently due to safety issues. Despite the constant revision in the Campaign plan, in terms of the number of Campaigns and necessary doses adjusting with the actual polio situation, all the necessary Campaigns during the Project period were implemented without any interruption in polio vaccine procurement funding. Therefore, it is judged that the Project inputs were appropriate to achieve the Project output.

for Campaigns. However, FGN financed this through its regular financial contribution to UNICEF and as part of the co-sharing schemes with UNICEF. Therefore, the cost incurred specifically for this Project could not be calculated.

[8] Utilization of the surplus in 2016 and 2017 was authorized by JICA without earmarking specific months of the Campaigns to be applied; therefore, UNICEF utilized it discretionally as a supplemental fund for polio vaccine procurement during 2016 and 2017.

[9] Instead of the usual 4-day Campaigns, it implements a rapid Campaign in security-compromised areas within a few hours, so that the vaccination team leave the site before insurgents even come to know that vaccination is going on. This is implemented through deployment of larger teams than the usual Campaign with military escort. This approach was introduced in response to the killing of polio vaccinators of the Campaign in February 2013.

3.2.3 Results of Calculations for Internal Rates of Return (Reference only)

Since the Project has no profitability, and because it is difficult to rationally calculate the economically attributed benefits, the internal rate of return was not calculated at the time of appraisal.

Both the Project cost was within the plan and the Project period was as planned. Therefore, efficiency of the Project is high.

3.3 Effectiveness and Impacts[10] (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

| Indicators | Baseline | Target | Actual | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2013 | 2015 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| | | Completion Year | 1 year Before Completion Year | Completion Year | | | | |
| 1. Immunization coverage of OPV in the country (%) | 96 (Sep.) | ≥80 *(Note 1)* | 96 (May–Dec.) | 93 | 98 | 98 | 98 | 98 |
| 2. Percentage of LGAs* surveyed at ≥80% coverage by LQAS[11](%) | 74 (Sep.) | ≥80 | 89 | 93 | 96 | 97 | 96 | 94 |
| 3. Percentage of LGAs surveyed at ≧80% coverage by LQAS in the very very high risk LGAs and very high risk LGAs(%) | 77 (Sep.) | ≥80 | 93 | 96 | 97 | 96 | 96 | 93 |
| 4. Percentage of teams with viable vaccine according to the Vaccine Vial Monitor (%) *(Note 2)* | 96 (Sep.) | ≥98 | 100 (May–Dec.) | 100 | 100 | 100 | 100 | 100 |

Sources: Documents provided by JICA, WHO, and UNICEF. Regarding Indicators 1, 2, 3, the given figures are the annual averages calculated by the evaluator, based on the documents provided.

*LGA: Local Government Area. Administrative division/unit that a local government is responsible for.

*Note 1*: The ≥80% target value used for Indicator 1 is given in the *Global Vaccine Action Plan* (2011–2020) as the target immunization coverage ratio effective for preventing infection; it is also used as the target indicator in Nigeria.

*Note 2*: The indicator value is calculated as (Total sum of the percentages with viable vaccine calculated by teams for each LGA ÷ Total number of teams) and is monitored by UNICEF.

Indicator 1, the immunization coverage of OPV in the country, has achieved and registered

[10] Sub-rating for Effectiveness is to be put with consideration of Impacts.

[11] LQAS (Lot Quality Assurance Sampling) is a survey methodology adopted for the Campaigns in Nigeria to track immunization coverage in a quick and simple manner.

more than 90%, which is higher than the target value of 80%.

Indicators 2 and 3 both have achieved the target values, showing significantly increased values in comparison with those before the Project. It is considered that this is the result of the increased resources mobilized after 2014 for quality improvement in Campaigns[12] as well as new strategies to enhance vaccination of children in areas that were previously inaccessible due to conflicts and other reasons. The new strategies included outside household vaccination, vaccination at transit sites such as markets and internally-displaced-persons camps for children without a fixed residence, as well as expansion of health camps and rehabilitation of nutrition/feeding centres as vaccination sites. Furthermore, there was particular emphasis after 2014 to enhance Campaign implementation in high-risk polio transmission areas. Based on the results of interviews with NPHCDA and international donors, improved quality and wider coverage of Campaigns are believed to be the key factors that have brought the current situation with zero WPV cases since 2017.

Regarding Indicator 4, the actual values after 2014 have been maintained at 100% as a result of improved management by deploying a supervisor at each Campaign site and enhancing the training of vaccinators. The long-term effort made to strengthen the cold chain equipment for the Campaigns has also contributed as the pre-condition.

For the Project, a "Loan Conversion" contract was signed between JICA and the Bill & Melinda Gates Foundation (BMGF). Under this mechanism, BMGF takes over the loan liabilities and repays the yen loan credit on behalf of FGN if the "Trigger Indicator" established for the Project is achieved. The established trigger indicator was:

"*No less than eighty percent (80%) of LGAs has been surveyed to be accepted at no less than eighty percent (80%) coverage by LQAS in at least 1 round in 2014 and 2015, respectively, in the very very high-risk LGAs and very high-risk LGAs.*"

As all the LQAS conducted in 2014 and 2015 demonstrated more than 80% coverage, this trigger indicator was judged achieved, and the loan conversion was officially triggered and went into effect in 2017.

3.3.1.2 Qualitative Effects (Other Effects)

(None)

3.3.2 Impacts

3.3.2.1 Intended Impacts

[12] Quality improvement in Campaigns refers to addressing non-compliance issues of vaccination operation, increased focus on hard-to-reach populations, and strengthening data management on Campaign implementation, for example.

[Quantitative Impacts]

Table 1: Number of reported polio cases

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|
| WPV | 122 | 53 | 6 | 0 | 4 | 0 | 0 | 0 |
| cVDPV | 8 | 4 | 30 | 1 | 1 | 0 | 34 | 18 |
| Total | 130 | 57 | 36 | 1 | 5 | 0 | 34 | 18 |

Sources: *Nigeria Polio Eradication Emergency Plan 2019*, and websites of the GPEI and WHO

After the last confirmed case in August 2016, WPV has not been reported in Nigeria. The related documents were accepted by ARCC in June 2020 and consequently Nigeria was granted polio-free status. According to the results of interviews with NPHCDA and international donors, it is judged that the significant decrease in the number of reported WPV cases since the Project launch can be attributed to the Campaigns implemented in 2014 and 2015, which the Project supported by financing the polio vaccine procurement. To be specific, the significant increase in immunization coverage after 2014 is considered as the major contributing factor—a result of the Campaigns during the Project period that improved the quality of the Campaigns and enhanced vaccination for children in areas previously inaccessible due to safety issues caused by conflicts. After Nigeria achieved polio-free status, the WHO African Region was consequently declared polio-free in August 2020.

[Qualitative Impacts]

"Improvement in the health of Nigerian children through polio eradication"

In this ex-post evaluation, data regarding children's health conditions was collected from the existing health surveys in Nigeria; it was analyzed against the polio eradication progress (i.e. the number of actual polio cases), and the evaluator had discussions with officials of NPHCDA and international donors to confirm if there is any causal relationship between them. Specifically, the evaluator collected in advance the basic health indicators of children aged under five, including the mortality rate, vaccination coverage, nutrition conditions, and underweight rate, of the past 10 years and held discussions with specialists, seeking their epidemiologic viewpoint, on their causal relationship with the progress of polio eradication in the country. Based on these discussions, it was judged difficult to find a clear/direct causal relationship between polio progress and children's health because the latter is influenced by multiple factors in a complex way.

3.3.2.2 Other Positive and Negative Impacts

(i) Impact on social development: Benefits generated for the target areas and beneficiaries

As an impact on social development through polio eradication, improvement in health services is expected as an effect of the Campaigns. As part of the Campaigns, which the Project supported through polio vaccine procurement, rehabilitation of Primary Health Centres (PHC) and expansion of community-level nutrition/feeding centres were promoted as strategies to increase the number of vaccination sites during the Project period. Additionally, more than 20,000 Community Volunteer Mobilizers (CVM) were hired and trained from 2014 to 2015 to conduct door-to-door visits of each household in communities, and surveyed polio issues, which consequently contributed to understanding of the actual living and sanitation conditions as well as the communities' needs. It was decided in 2019 that CVM will continue their activities within a framework to enhance primary healthcare services. Along with an expectation to utilize the rehabilitated health-related facilities, it is expected to contribute to the improvement of health services at the community level in the future as impact. Additionally, Campaigns should contribute to promoting RI in the long term, and subsequently improving the health of the general population. This should thus contribute to the social development aspects in due course, including decreased medical cost, increased school attendance rate, and increased opportunities to participate in economic activities, and potentially enhance regional and national development in the future.

(ii) Impact on gender

Approximately 95% of CVM hired for the Campaigns, which the Project supported through polio vaccine procurement, were women; this is thus considered to have enhanced women's empowerment in the health sector. The reason for the high employment rate of women lies in Nigeria's cultural background—they are culturally preferred over men when it comes to making door-to-door visits and conversations with mothers, and also to conducting indoor vaccination inside the house.

(iii) Impact on the natural environment/resettlement and land acquisition

The Project financed polio vaccine procurement—there was no impact on the natural environment, and neither resettlement nor land acquisition was required.

(iv) Other impacts

According to the international donors, the experience of establishing the polio Emergency Operation Centre (EOC) and related infrastructure formed by EOC was applied effectively to an emergency operation that was required for Ebola hemorrhagic fever in 2014. It is expected that the polio experience will be utilized effectively for future emergency operations in the event of an outbreak of other epidemics. As an indirect impact of activities outside of Campaigns, health

camps were held as RI sites with particular focus on high-risk polio transmission areas as a strategy to increase RI coverage including polio immunization. In these health camps, intervention for other felt needs of each community, such as malaria diagnosis, general disease treatment, provision of anti-helminthic and multivitamin supplementation, was carried out, which contributed to enhancing the available health services at the community level.

In sum, the Project achieved all the effect indicators—immunization coverage of OPV by the Campaigns achieved 93%, higher than the target of 80%, in the Project completion year; the other two indicators of immunization coverage surveyed through LQAS also achieved their targets, showing significant improvement compared with the values registered before the Project. As an impact of the Project, the Campaigns contributed to the significant decrease in the number of WPV cases after 2014, and WPV has not been reported since 2017 in Nigeria.

Thus, this Project has achieved its objectives. Therefore, effectiveness and impacts of the Project are high.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

Under the new government that took charge in 2019, the presidential task force on polio is maintained with the same function as at the time of appraisal—it regularly reports on the polio status and advises state governors for ensuring appropriate implementation of Campaigns in each state through official meetings, such as the National Economic Council that is a forum to discuss national economic policies. Regarding Campaigns, there is no change in the institutional structure since the Project appraisal—the EOC, headed by NPHCDA, coordinates all polio eradication initiative activities that are implemented jointly by government and development partners, with leading technical roles played by international donors such as WHO and UNICEF in accordance with the GPEI.

On the other hand, Nigeria was granted polio-free status in 2020 and a transition plan of the institutional framework for polio activities from international donors to FGN is under discussion at the time of ex-post evaluation. Campaigns will be scaled down gradually after receiving the polio-free certification, and the institutional framework established for polio eradication will be integrated into the framework of RI; the plan is to maintain the polio-free status by enhancing RI. The *Nigeria Strategy for Immunisation and PHC System Strengthening (2018–2028)* (NSIPSS) describes the transition plan of the related policies and infrastructure, and the international donors that have supported the Campaigns have expressed their continuous support for implementing the NSIPSS. While NSIPSS defines that NPHCDA drives policy and central

coordination regarding immunization and the state levels are tasked with implementation, the challenge will be the huge variation in RI performance and achievement levels of the States. Furthermore, the NSIPSS upholds the other two main pillars, strengthening PHCs[13] and Surveillance Capacity.

Based on the NSIPSS, an asset mapping exercise was conducted in which all the assets established through the polio eradication activities were listed, including vaccine transportation infrastructure, data management tools, and Campaign operation framework. At the time of ex-post evaluation, discussion is underway to identify relevant institutions in the health sector, including NPHCDA, that can inherit/absorb such assets in the future, and to plan in detail how best to transfer such assets to them. Approaches that have been implemented to enhance immunization coverage, such as health camps, are expected to continue in the RI framework.

Despite that WPV has not been reported since 2017, cVDPV cases are reported continuously. As a measure, the use of trivalent OPV was suspended and fractional use of Inactivated Polio Vaccines has been in practice since April 2016.

### 3.4.2 Technical Aspect of Operation and Maintenance

At the time of ex-post evaluation, polio vaccine procurement for Campaigns is executed by UNICEF, as at the Project appraisal time. In parallel, UNICEF provides technical support to FGN in vaccine procurement for RI, together with GAVI[14].

Operation manuals and guidelines that describe the detailed procedure to implement Campaigns were developed for the OPV immunization staff and surveillance officers prior to the Project; these are well utilized at the time of ex-post evaluation. In addition to the training for Campaign-implementing staff and officers, training for Campaign managers and supervisors is also conducted with the support of WHO and the Centers for Diseases Control and Prevention of the United States of America (CDC) as necessary. WHO will put further emphasis on the strengthening of surveillance capacity in the transitional phase as a means to ensure sustainability of the polio-free status. WHO will also continue providing technical support to strengthen the capacity of Nigeria's polio laboratories.

However, as the Campaigns have been implemented through the leading technical roles played by international donors such as WHO and UNICEF, it can be said that technical sustainability

[13] In accordance with the NSIPSS, out of the 9,566 wards (minimum administration unit) across the country, about 800 are without a single PHC. In addition, approximately 80% of the existing PHCs are not functional due to lack of medical equipment and shortage of health workers.

[14] GAVI (The Global Alliance for Vaccines and Immunization) is a public-private partnership to promote global health through improvement in access to vaccines in developing countries to save lives of children and transform the lives of individuals with better health; partners include WHO, UNICEF, WB, BMGF, donor countries, developing country governments, vaccine manufactures, research and technical health institutes, NGOs, and faith-based organizations.

of NPHCDA alone be constrained. While international donors are planning to continue providing support for NPHCDA, further capacity development is required at State and LGA levels to strengthen the RI implementation framework as a means to maintain high polio immunization coverage. A five-year technical assistance plan for RI-implementing officers at State and LGA levels is under discussion at the time of ex-post evaluation.

3.4.3 Financial Aspect of Operation and Maintenance

Polio vaccine procurement after the Project has been financed by WB through "Polio Eradication Support Project Additional Financing", which will be completed in the end of 2020. It has been planned that the cost of vaccine procurement after it will be financed under a component of the "WB Multiphase Programmatic Approach (MPA)" for the period of 2020–2030. According to a WB official, "MPA" will not be a polio-specific programme, but a programmatic approach to support the strengthening of RI, surveillance, cold chain infrastructure[15], and PHCs among others, and will be aligned to the NSIPSS.

The necessary budget for vaccine procurement for RI and related campaigns between 2018 and 2028 is estimated to be USD 2.7 billion. In 2018, 50% of the necessary budget was financed by FGN (the rest was covered by GAVI). In an agreement with GAVI in 2018, FGN has committed to gradually increase the annual budget allocation for vaccine procurement and bear 100% financial burden necessary for it by 2028. FGN has also committed to yearly allocate USD 300 million after 2028. According to the NSIPSS, FGN's immunization financing has actually increased over the years—it had allocated about USD 29 million to NPHCDA for RI vaccines and devices in 2018, a 116% increase on the 2017 budget.

On the other hand, some interviewees expressed concern over the possibility of donors' financial assistance gradually shifting to other polio-endemic countries after acquisition of the polio-free certification. According to the NSIPSS, the GPEI's budget allocation for Nigeria decreased by 56% between 2016 and 2019, which may particularly affect the continued employment of the approximately 23,000 polio-funded personnel, right from staff of international organizations to those hired at the community level. A measure to ensure financing of the RI operation, which is estimated to require USD 600 million between 2018 and 2028 (excluding personnel cost), along with improvement in operational efficiency, is under discussion at the time of ex-post evaluation. However, financial sustainability of the operation, especially at the levels of the State and LGAs, which are responsible for the actual RI implementation, is not yet guaranteed at the time of ex-post evaluation.

[15] Cold chain stores are considered insufficient for vaccines for general communicable diseases, and the necessary logistics are not well established in consideration of the strengthening of RI.

3.4.4 Status of Operation and Maintenance

Neither operational issues nor delays have occurred in the polio vaccine procurement process under UNICEF at the time of ex-post evaluation. The cold chain is functioning appropriately to implement Campaigns.

The polio-free status of Nigeria was confirmed by ARCC in June 2020 and WHO African region was also declared polio-free in August 2020. Under these circumstances, the plan is to gradually scale down Campaigns and integrate the polio eradication efforts into the RI framework. Nevertheless, Campaigns will be continued for the next few years as the RI operation is not set up adequately yet. Campaign is planned with a three-years period so the concrete Campaign plan has been developed till 2022 at the time of the ex-post evaluation. The number of implemented and planned Campaigns after 2016 is given in the following table.

Table 2: Number of Campaigns implemented and planned after the Project

| Implemented | | | | Planned | | |
|---|---|---|---|---|---|---|
| 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| 10 | 7 | 10 | 9 | 3 | 3 | 2 |

Source: Documents provided by WHO

As a summary of sustainability, with respect to Campaign implementation including polio vaccine procurement, the institutional/organizational aspects are well established, and there is no change since the Project appraisal time; there are no major issues in the technical or financial aspects, and Campaigns have been executed without major issues in accordance with the Campaign plan, which is constantly updated along with the actual polio situation.

The institutional and organizational framework to maintain the polio-free status, however, will shift from Campaigns to RI. The institutional/organizational aspects of RI implementation are not fully established yet at the time of ex-post evaluation. The focus of international donors' support is also expected to shift from Campaign implementation to the strengthening of RI, while also supporting improvement of general disease surveillance including communicable diseases and strengthening of PHCs; discussion is underway to set up the necessary framework accordingly. At the time of ex-post evaluation, discussion on concrete steps and procedures is underway to implement the developed transition plan; there are, however, uncertainties in the institutional/organizational, technical, and financial aspects to maintain the polio-free status, from the viewpoint of long-term sustainability.

Thus, some minor problems have been observed in terms of the institutional/organizational aspect, technical aspect, financial aspect, and current status. Therefore, sustainability of the Project effects is fair.

## 4. Conclusion, Lessons Learned and Recommendations

### 4.1 Conclusion

The objective of the Project was to optimize administration of the polio vaccine to children under five years, by procuring OPV necessary to implement Campaigns in 2014 and 2015, thereby contributing to the early eradication of polio in the whole country. Nigeria was one of the three polio-endemic countries at the time of appraisal, and the international community had positioned Nigeria as the most prioritized country for polio eradication. Polio eradication was also positioned as an emergency and a priority issue by the FGN, and the Project is consistent with the national development plans and the development needs. Furthermore, the Project was consistent with Japan's ODA policies that have demonstrated strong commitment toward the health sector in the international arena. Therefore, its relevance is high. The Project cost was within the plan and the Project period was as planned, and accordingly the efficiency is high. All of the operation and effect indicators set up for the Project were achieved, including immunization coverage. Consequently, impact was confirmed in the controlled number of WPV cases after 2014, and no case of WPV has been reported since 2017. Therefore, effectiveness and impacts are high. Regarding sustainability, there are no major issues in the implementation of the Campaigns in the institutional/organizational, technical, and financial aspects: the Campaigns are implemented in accordance with the plan. Meanwhile, future polio eradication activities are planned for integration into the RI framework. The institutional framework of RI is not yet well established, and detailed activities to implement the transition plan are under discussion at the time of ex-post evaluation, hence there is uncertainty in institutional/organizational, technical, and financial aspects of the transition plan implementation. Therefore, sustainability is fair.

In light of the above, this project is evaluated to be highly satisfactory.

### 4.2 Recommendations

#### 4.2.1 Recommendations to the Executing Agency

To maintain the polio-free status, achieved due to the long-term effort supported by international donors including the Project, it is recommended that FGN establish at the earliest a sound institutional framework of RI and strengthen surveillance capacity. Under these circumstances, it is also recommended that NPHCDA ensure the necessary budget allocation for the transition plan of polio activity framework from Campaigns to RI and establish a structure to support capacity development of health ministries at the level of the State, which will be responsible for implementing RI.

#### 4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Project formulation that fully leverage the existing international aid coordination framework

In Nigeria, the international aid coordination framework had been established for polio eradication activities over decades in line with the GPEI. Accordingly, overall coordination of polio strategy-making and activities has been managed by EOC, which is headed by NPHCDA in collaboration with a number of international donors, making the most of the specialized capacities of each international donor toward the common goal of polio-free certification. On the other hand, JICA did not have project experience with exclusive focus on polio-specific issues in Nigeria before the Project. Considering this, the Project was formulated leveraging the efforts of the existing international aid coordination framework to minimize the Project risk; this consequently led to full achievement of the expected development effects.

Furthermore, the Project was authorized retroactive financing for polio vaccine procurement for the Campaigns that took place before the Project in the event that WB's funds got exhausted earlier than anticipated; the need to apply this, however, did not arise and the retroactive financing was not applied. Additionally, JICA authorized utilization of the yen loan surplus to support polio vaccine procurement after the Project completion. Thus, the Project endorsed flexibility in its terms of the yen loan disbursement, including the finance allocation period and conditions, within the international aid coordination framework under the common goal of polio-free certification. This flexibility helped eliminate a risk involved in securing financial resources in spite of the constant revision of the Campaign plan that modifies the necessary number of vaccines and its types to be procured, thus ensured continuous implementation of Campaigns. In the long run, it secured the continual and stable implementation of Campaign strategies and plans that were established and developed by the international aid coordination framework, thereby making a significant contribution to interruption of WPV transmission after the Project.

In such a situation, as the Project, where the international aid coordination framework has been well established for the target assistance area in the beneficiary country, a new JICA project should be formulated to leverage the existing framework, which consequently should minimize risks of the JICA project itself. In addition, allowing flexibility in the JICA loan disbursement, as permitted in the Project, should maximize the outcomes generated by the existing international aid coordination framework.

**BOX: Coordination framework of international efforts for the polio eradication initiative in Nigeria and its development effect and impact**

**1. Coordination framework of international efforts for polio eradication in Nigeria: Role of international donors and the Project**

The GPEI was launched in 1988 at the 41st World Health Assembly with the aim of interrupting WPV transmission. It was agreed that four spearheading partners—WHO, UNICEF, CDC, and Rotary International—would have the following defined roles:

- WHO, as the lead organization, provides overall strategic planning, technical direction and support, and is responsible for the surveillance and certification process. WHO also coordinates operations, resource mobilization, donor contributions and advocacy activities for Campaigns. UNICEF procures and delivers vaccines and supports countries in developing and implementing communication and social mobilization strategies. Together with the partners, it supports countries in running Campaigns. It also works with the vaccine industry to maintain sufficient supply of OPV.
- CDC deploys epidemiologists, public health experts, and other scientists to WHO and UNICEF for the eradication initiative. It also provides funding for the OPV and a wide range of technical expertise and laboratory support.
- Rotary International was the first to inspire the vision of a polio-free world. Its primary responsibilities are fundraising, advocacy, and volunteer recruitment.

In 2007, BMGF joined as the fifth spearheading partner and became a major funder of the activities under the initiative, including Campaigns, operational costs of EOC, and innovative technologies.

The five institutions delegate staff to EOC in Nigeria, which was established in 2010, and have been an integral part of the daily EOC operation for the polio eradication initiative. EOC is commissioned as a management tool for NPHCDA and headed by the Incident Manager assigned from NPHCDA, and coordinates the overall response and related activities under the initiative.

In Nigeria, efforts for polio eradication have been made over decades through the international aid coordination framework in line with the GPEI. At the end of 2011, FGN made an urgent call to international donors for assistance, requesting funding to meet the financial requirement for polio vaccine procurement—WB, which had financed polio vaccine procurement in Nigeria for more than a decade, had expressed its intention to conclude the funding for polio vaccine

procurement with the completion of the "Polio Eradication Support Project" (2012–2014). Around the same time, the Japanese government requested JICA to analyze the feasibility of formulating the Project, as the second project to support polio eradication efforts after the "Polio Eradication Project," an ODA loan project implemented in Pakistan. Furthermore, it fell under Japan's Assistance Package for Africa, "Financial Support of 50 Billion Yen to the Health Sector," which was included in the category "V. Creating an Inclusive Society for Growth," in the *Yokohama Action Plan 2013–2017* adopted by TICAD V held in 2013. Accordingly, the Project formulation was promoted by all actors of the Japanese government as one.

On the other hand, there had been no Japanese yen loan project in Nigeria since the 1992 "Telecommunications Network Development Project", which was the second yen loan to Nigeria. Nevertheless, with respect to polio eradication efforts in Nigeria, the "Buy-Down" financing mechanism was already in place with the existing WB project—the WB loan credit was repaid through a fund financed by BMGF on the condition of successful completion of its project where all the established trigger indicators for the Campaigns were met. JICA, too, had prior experience of signing a similar "Loan Conversion" agreement with BMGF in the yen loan "Polio Eradication Project" in Pakistan in 2011; this led to high expectations of application of a similar mechanism in Nigeria to finance polio vaccine procurement as a yen loan project. It is noteworthy that the "Loan Conversion" mechanism in Nigeria was distinctive in that BMGF assumed all liability to repay the loan on behalf of FGN, on the condition that the Project achieved the pre-established trigger indicator.

**2. Development effect and impact of international aid coordination framework on Nigeria's polio eradication initiative**

Nigeria was one of the remaining three polio-endemic countries (along with Afghanistan and Pakistan) in the world and the only polio-endemic country in Africa at the time of appraisal in 2014. As the most prioritized country for polio eradication activities, it was receiving intensive investment of resources and assistance from international donors. Highly specialized personnel from international organizations were dispatched to EOC, and FGN utilized the abundant resources to the utmost, including highly specialized human resources and technical assistance from the international organizations with expertise in the area. As a result, the polio eradication initiative in Nigeria has successfully generated development results—interruption of WPV transmission after 2017.

Based on the results of interviews with the major international donors in Nigeria, it is considered that the high commitment demonstrated by all actors in Nigeria under the strong

initiative of FGN, as demonstrated by the presidential task force, was one of the contributing factors that maximized the effects of the resources and technical assistance intensively provided by the international aid coordination framework. While all actors from public institutions, including those at the State and community levels, to social actors such as religious groups and local traditional leaders, demonstrated high commitment to the polio eradication initiative, international donors highly recognized the important role that FGN has played in the international aid coordination framework. Donor officials interviewed in Nigeria agreed that NPHCDA has demonstrated strong commitment and leadership in overall coordination in the polio eradication initiative, and also has assured accountability to donors in the related activities and strategies, which is considered to be another contributing factor that maximized the effect of international aid coordination. However, with respect to the Campaigns, specialized international organizations such as WHO and UNICEF have substantially led the strategy-making and implementation, and thus, NPHCDA's institutional and technical contribution is considered limited here.

The Project ensured the continuous implementation of the Campaigns, which was a critical factor at the last mile stage to achieve polio eradication, and contributed to the interruption of WPV transmission after 2017, as described in this report. The polio-free status of Nigeria was confirmed by ARCC in June 2020, and it is judged that the Project has successfully leveraged the development results and efforts built up in Nigeria over the decades by a number of international donors, and contributed toward achievement of the common goal of polio eradication. In addition, there were few donors other than WB that were able to offer financial resources on such a large scale for polio vaccine procurement at the time of appraisal—the Project proved to the international arena the advantage of Japanese ODA, which has a yen loan scheme option that offers financial support on a large scale, as well as the commitment of the Japanese government in supporting global health.

In the polio eradication initiative in Nigeria, EOC has led the monitoring, carrying it out using the commonly established indicators by the international aid coordination framework, to confirm achievement of the outcome, "Eradication of WPV i.e. Interruption of WPV Transmission." The monitoring methodology is soundly established with support from international donors, for which training is held continuously and its supervision, too, has been strengthened, so that the quality of the monitoring implementation is ensured. The related data, including the indicator values and the number of new polio cases, is updated weekly and shared with all international donors in the Excel format. Additionally, the progress in polio eradication is reported to the donors through periodic donors' meetings, where review of the existing

activities and new strategies are discussed. On the other hand, whereas financial resources are provided by a number of international donors to be invested in related activities, fund management and monitoring of its specific output in a distinctive management framework and reporting format by the respective donor are not in practice within the international aid coordination framework in Nigeria. Therefore, it was difficult to manage and report exclusively on the Project and yen disbursement. Specifically, the yen loan Project management required recalculation of the polio-related data, extracting the corresponding data for which the yen loan was utilized exclusively—such data should be submitted to JICA, along with the monitoring data elaborated by the existing international aid coordination framework. This was a difficult task for NPHCDA. JICA tried to collect the necessary data from other donors and by hiring a local consultant to support elaboration of the necessary reporting, JICA resulted in struggling with its Project and finance management. Nonetheless, it faced some struggles vis-à-vis the Project and finance management.

**3. Considerations**

[The aid harmonization in management perspective of the yen loan project that comprises a program managed by an international aid coordination framework: Consideration of an alternative management and evaluation framework at the program level]

When the implementation and management framework of a supporting program is already well established by an international aid coordination framework, requiring exclusive data and management regarding JICA-financed activities, particularly in a distinctive reporting format of JICA, implies extra burden for not only the beneficiary country but also donors. When yen loan is applied to activities that are an integral part of a program managed by an international aid coordination framework with other international donors, it is important for JICA to discuss with the beneficiary government, as well as internally with its related departments, at the time of project formulation, which reporting contents and format would be the most optimal for the beneficiary government to handle and from the viewpoint of program management efficiency, while satisfying conditions to ensure accountability. In the process of discussing the terms and conditions for yen loan management, it is hoped that all parties make efforts to enhance aid harmonization to the best of their ability, in consideration of "Aid Effectiveness" and "Global Partnership for Effective Development Cooperation."

[Benefits and issues in utilizing funds from the private sector]

In Nigeria, the yen loan project was not implemented prior to the Project over the past decades owing to debt relief and the country's governance vulnerability. However, there was no major issue in the credit conditions of FGN at the time of appraisal; by utilizing the "Loan

Conversion" mechanism and international aid coordination framework, the perfect opportunity was presented to restart the yen loan for FGN that was mobilizing resources from selected financial sources. This experience is expected to act as a reference for countries with similar development conditions when needing financial resources on a large scale, as an innovative option to diversify financing options and sources of ODA, utilizing the private sector's funds.

On the other hand, utilization of the private funds in this Project required extensive administrative arrangement, including a wide range of analysis and negotiations from such perspectives as financial conditions, credit management, and risk management among others, to establish a contract with the private financing partner. Furthermore, JICA required extensive time and efforts to coordinate with and obtain approval from the relevant Japanese ministries to prepare and sign the "Loan Conversion" contract, particularly on its unique financial terms and conditions. JICA should deeply deliberate in advance the required administrative cost and procedures for signing similar contracts with private financing partners, when considering utilization of private sector's funds to formulate a yen loan project. Once partnerships to be formed are determined, departments specializing in finance and legal issues should be fully involved as part of the appraisal team.

Comparison of the Original and Actual Scope of the Project

| Item | Plan | Actual |
|---|---|---|
| 1. Project Outputs | Procurement of 476 million doses of OPV necessary for Campaigns in 2014 and 2015 (9 Campaigns in 2014 and 7 Campaigns in 2015) | - Procurement of 451 million doses of OPV necessary for Campaigns in 2014 and 2015 (9 Campaigns in 2014 and 8 Campaigns in 2015)<br><br>- Procurement of 12 million doses of OPV for Campaigns during 2016 and 2017 |
| 2. Project Period | May 2014 – December 2015 (20 months) | As planned |
| 3. Project Cost | | |
| Amount Paid in Foreign Currency | 11,390 million yen | Not available |
| Amount Paid in Local Currency | 454 million yen | Not available |
| | (720 million naira) | (Not available) |
| Total | 11,844 million yen | Not available |
| ODA Loan Portion | 8,285 million yen | 8,269 million yen |
| Exchange Rate | 1 naira = 0.63 yen<br>1 USD = 158.2 naira<br>(As of November 2013) | |
| 4. Final Disbursement | December 2017 | |