



# Evaluating the sustainability of health programmes: A literature review



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**Background:** Evidence shows that fewer than 1% of all international development projects worldwide, including those in Nigeria, were evaluated at least 2 years after completion to learn what genuinely changed. With over 787 million US Dollars in official development assistance to Nigeria's health sector in 2017, this seeming disinterest in assessing sustainability – particularly in light of the international commitments to the Sustainable Development Goals – is concerning.

**Objectives:** We aim to assess the overall body of knowledge on the evaluation of sustainability of health programmes in Nigeria.

**Methods:** We conducted a broad literature search, which included grey literature such as development project reports to identify all relevant studies reporting on our study objective. Articles were selected for inclusion using predefined criteria and data were extracted onto a purposely designed data extraction form.

**Results:** Four articles met our search criteria. The review identified financial, technical, social and environmental barriers to sustainability. Recommendations encompassed all stages of the project cycle: funding, design, implementation, monitoring and evaluation.

**Conclusion:** This review explored the overall body of knowledge on the evaluation of sustainability for health programmes in Nigeria. A clear understanding of operational indicators for sustainability, embedding sustainability early in the project cycle, community ownership, capacity building, effective collaboration, leadership and quality post evaluation are key for sustainable development in Nigeria. A limitation of this review is the small number of studies included and the assessment of sustainability at a single point in time. Much more empirical and rigorous research is needed to explore sustainability of health programmes in Nigeria. Research should also seek to understand the views of key stakeholders such as donors, implementing partners and the government.

**Keywords:** sustainability; sustainable development; accountability; aid effectiveness; post-project evaluation; impact evaluation; funding; health programmes; Nigeria.

## Introduction

Nigeria has been one of the largest recipients of health aid since 1999, and most critical public health interventions in the country are largely funded by donors (Organisation for Economic Co-Operation and Development [OECD] 2019). Nigeria received over 10 billion dollars in official development assistance (ODA) in just 2 years between 2013 and 2015; 49% of this assistance was allocated to the health sector (OECD 2016a). In 2017, Nigeria was the top recipient of ODA to the health sector (OECD 2019). Despite the collaborative efforts of Nigerian government, donor agencies and nongovernment organisations (NGOs) to implement efficient and effective health interventions, problems of sustainability leave these efforts much to be desired with donor-supported programmes fraught with limited effectiveness, scarce impact and low sustainability (European Commission 2010; Smith 2012). For many years, the question of what happens to health intervention beneficiaries when donor funding for implementation expires and ways to measure this has persisted (Bossert 1990; Cekan 2016; Mancini & Marek 2004; Proctor et al. 2015). This question is especially pertinent for Nigeria where despite billions of dollars received for funding of health programmes over the past years, very little is known about their sustainability (European Commission 2010). With the decline in donor funding, the question of how to effectively allocate limited resources with a more pronounced aim of sustainability is germane. As a result, sustainability has become an important global target to achieve.

There have been various definitions of sustainability proposed over the years (Gruen et al. 2008; Jha et al. 2016). The OECD's Development Assistant Committee criteria for evaluating development assistance defined sustainability as 'concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn' and emphasised the importance of financial and environmental sustainability (OECD 2016b). Scheirer and Dearing (2011:2061) defined sustainability as the 'continued use of program components and activities for the continued achievement of desirable program and population outcomes'. Rogers and Williams (2008) proposed that sustainability does not always involve continuity of projects and can sometimes be sustained capacities of individuals and organisations, funding, participation and ideas.

Much of the focus on sustainability of development projects in Nigeria has been on the continuation of funding for projects, rather than assessing post-project impact (Adekeye 2014; Mirzoev et al. 2015). While some organisations have done a few investigations or assessments to evaluate the sustainability of various development projects in Nigeria (Japan International Cooperation Agency 2012; KfW Development Bank 2014; The World Bank 2014), only a few talked to stakeholders in a methodologically detailed way to include participant voices in such evaluations. Returning to the field years after the end of the project to ask project participants and partners what benefits were sustained, why some outcomes were sustained and others were not, and make recommendations for future projects is key to Sustained and Emerging Impacts Evaluation (SEIE) (Cekan 2016; Iwelunmor et al. 2016). It avails the opportunity to evaluate the endurance of improvements shown at the end of the project such as changes in knowledge, attitude, behaviour, beneficiaries' health and education status, impact on infrastructure development, and individual and community empowerment.

Different attempts have been made to identify potential influences on sustainability. Stirman et al. (2012) in their review of sustainability of new programmes and innovations identified studies from a variety of fields, but the applicability of their findings to any one sector including the health sector may be somewhat limited. Also, only one Nigerian study was included. In another review, Iwelunmor et al. (2016) proposed the dynamic sustainability framework which emphasised some major elements for sustainability such as the intervention, the context in which the intervention is delivered and the broader ecological system within which health and healthcare systems exist and operate. The review examined studies across different settings; however, it may be difficult to generalise its findings to the Nigerian context.

While sustainability is a desired outcome of effective implementation, there has been little research-based evidence in this area in Nigeria (Iwelunmor et al. 2016; Smith 2012). This article aims to explore the overall body of knowledge on the evaluation of sustainability of health programmes in Nigeria, and to analyse factors identified as potential facilitators or barriers to the sustainability.

## Methods

### Search strategy

We searched MEDLINE, EMBASE, CINAHL, and Web of Science using the following search terms: (Nigeria or Anambra or Enugu or Akwalbom or Adamawa or Abia or Bauchi or Bayelsa or Benue or Bornu or Cross river or Delta or Ebonyi or Edo or Ekiti or Gombe or Imo or Jigawa or Kaduna or Kano or Katsina or Kebbi or Kogi or Kwara or Lagos or Nasarawa or Niger or Ogun or Ondo or Osun or Oyo or Plateau or Rivers or Sokoto or Taraba or Yobe or Zamfara or Abuja) AND (sustainab\* OR ex post evaluat\* OR post project evaluat\* or post completion) AND (health intervention\* OR health program\* OR health project). We also searched the grey literature and the reference sections of reviews and reports on implementation and sustainability.

### Inclusion and exclusion criteria

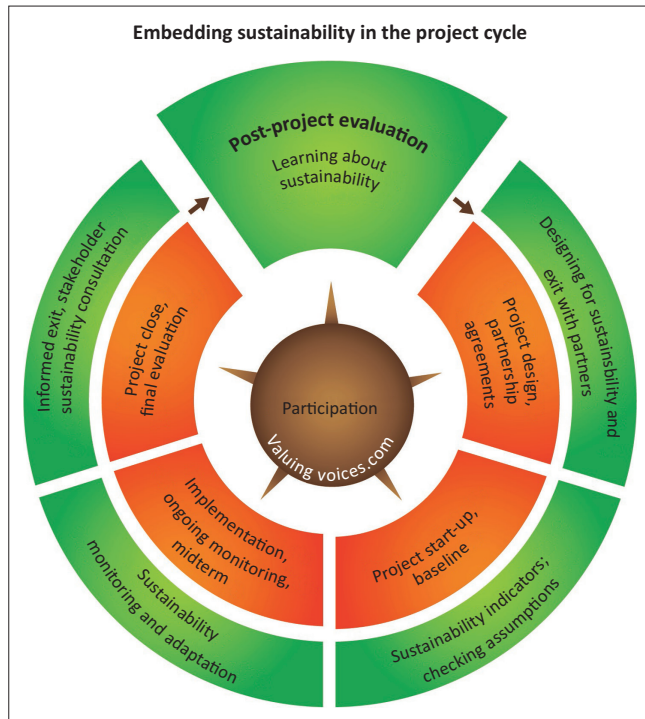
We included studies written in English that addressed sustainability of specific health interventions at least 2 years after project completion. Ex-post evaluations are generally conducted at least 2 years after the project completion because waiting at least 2 years from close of project will ensure residual inputs from the project have ceased (Zivetz, Cekan & Robbins 2017). We excluded articles that did not examine sustainability using any quantitative or qualitative research methodologies, studies with no information on follow-up of individuals after project implementation and studies where ex-post evaluations were in fact final evaluations.

### Data screening and extraction

The titles and abstracts were screened, and the full papers of potentially relevant studies were obtained. The Critical Appraisal Skills Programme Tool (2018) was used to assess the quality of studies. We extracted data on study design, sample characteristics, definition of sustainability and their findings.

### Analytical framework

A series of concepts and indicators have been proposed to assess if programmes are most likely to be sustained. Cekan and Zivetz (2016) focused on sustainability prospects from funding and design/partnerships and assumptions through to post-project SEIE. We used this framework for assessing sustainability through the project cycle because it includes the following: a theory of sustainability (TOS) as part of the project's theory of change; a monitoring and evaluation plan that includes explicit sustainability goals, impact objectives and methods for flagging unexpected and emerging outcomes; funding and start-up for sustainability including baseline with local voices; designing for sustainability including country ownership and capacity development; implementing for sustainability including effective collaboration/linkages-partnerships and monitoring and evaluation for sustainability including ex-post evaluations (Figure 1).



Source: Cekan, J. & Zivetz, L., 2016, *Missing link: Sustained and emerging impact evaluation*, viewed 25 November 2018, from <http://www.betterevaluation.org/en/blog/SEIE>

FIGURE 1: Sustainability full-cycle development.

## Ethical consideration

This article followed all ethical standards for research without direct contact with human or animal subjects.

## Results

The flow chart of the search results is presented in Figure 2. The search identified 681 citations, and following removal of duplicates and application of our inclusion and exclusion criteria, only four articles were eligible for inclusion in the review. The overviews of included articles are displayed in detail in Table 1.

## Characteristics of included studies

Identified studies reported sustainability outcomes focused on management of malaria (Ajayi et al. 2010), HIV/AIDs (Burlew et al. 2014) and onchocerciasis (Amazigo et al. 2007; Mbanefo et al. 2010). All the studies used qualitative methods such as in-depth interviews, focus group discussions and observations. One study was conducted in Anambra State in southeast Nigeria (Mbanefo et al. 2010), another was conducted in Oyo State in southwest Nigeria (Ajayi et al. 2010), one study included participants from every state (Burlew et al. 2014) and another was a multi-national study involving several countries, including Nigeria (Amazigo et al. 2007). All studies occurred between 3 and 11 years post the initial implementation. Two studies were done 3 years post-implementation (Ajayi et al. 2010; Burlew et al. 2014), one was 5 years post-implementation (Amazigo et al. 2007) and another was 11 years post-implementation (Mbanefo et al. 2010).

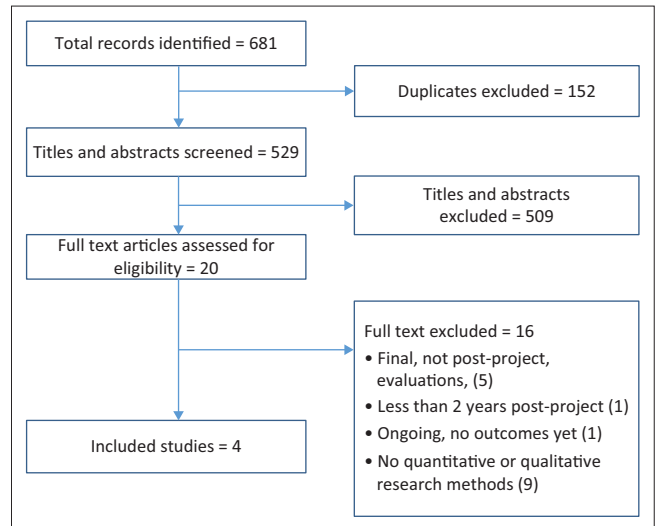


FIGURE 2: Flow chart of search and study inclusion process.

## Narrative synthesis of findings

### Defining sustainability

All four studies had different definitions or terms used to describe sustainability. The study by Amazigo et al. (2007) evaluating sustainability in 41 projects of the African programme for onchocerciasis control adopted the World Health Organization definition for sustainability:

The ability of a project to continue to function effectively, for the foreseeable future, with high treatment coverage, integrated into available health care services, with strong community ownership using resources mobilized by the community and government (Amazigo et al. 2007:2017).

In the study by Burlew et al. (2014) assessing the relevance, efficiency and sustainability of HIV/AIDS in-service training (IST) in Nigeria, sustainability was described according to PEPFAR priorities for increased ownership in terms of how implementing partners continue to collaborate with each other in the management and delivery of HIV/AIDS-related IST. Ajayi et al. (2010) defined sustainability of the intervention as the extent to which the programme continued in their study assessing sustainability of home treatment for malaria. Emphasis was placed on community participation and community ownership of the programme, where communities play key roles in planning, leadership, decision-making, implementation, monitoring and contributing resources to the programme in the study by Mbanefo et al. (2010).

### Theory of sustainability

A TOS is much like a theory of change in that it presents the causal assumptions underlying a project design, and anticipates short- and long-term outcomes, and sustainability impacts expected with project interventions (Zivetz et al. 2017). Ajayi et al. (2010) noted that lack of explicit outcomes and commitment assumptions about institutions expected to take up or continue delivery of project services contributed to the attrition of community volunteers after the withdrawal

**TABLE 1:** Summary of included studies.

Authors and year	Intervention	Study design	Implementation date	Post-project evaluation date	Results
Ajayi et al. 2010	Home management of malaria (HMM)	13 FGDs was conducted among trained community medicine distributors (CMDs), 14 key informant interviews with community leaders and observation was carried out on 13 CMDs	2005–2007	2010	Utilisation of CMDs was said to be high when the project started but dwindled after the researchers left the community. Mechanisms to draw unflinching commitments from the government and community to sustain community-based intervention should be explored
Amazigo et al. 2007	Community-directed treatment with ivermectin (CDTI) for onchocerciasis	Multiple interviews, documents review and observations. Quantitative and qualitative assessments were used to obtain individual community scores and an overall sustainability score for each project graded on a scale of 0–4	1997	2002–2003	Of the 41 projects evaluated, 70% scored 'satisfactorily' to 'highly sustainable' at the community level
Burlew et al. 2014	PEPFAR-funded in-service training (IST) for HIV/AIDS services	Key stakeholders from 12 PEPFAR-funded implementing partners, three professional councils, four development partners, the human resources for health division of the Federal Ministry of Health, and the National Agency for the Control of AIDS (NACA)	2004	2007–2012	Recommendations to increase the efficiency, effectiveness and sustainability of PEPFAR-funded IST such as improve collaboration and coordination among implementing partners
Mbanefo et al. 2010	Community-directed treatment with ivermectin (CDTI)	Focus group discussions and in-depth interviews were used to obtain information on the psychological impacts and sustainability of the CDTI programme	1997	2008–2009	The CDTI programme performed creditably well, but challenges exist in the areas of coverage, monitoring, resources and participation

of the project team. Sometimes assumptions of sustainability are rather optimistic and there is a tendency to overestimate the likelihood of sustainability.

### Measuring sustainability

All of the studies reviewed offered insight into the trajectory of change post-project. The study by Amazigo et al. (2007) reported that over 70% of projects received satisfactory sustainability scores – 2.5 or more on the 4-point scale. The sustainability scores were based on nine community-level indicators assessing the project activities, processes and resources such as leadership, supervision, drug supply and distribution, training and mobilisation, financing, human and material resources.

In the study by Ajayi et al. (2010), the health benefits achieved during intervention, such as uninterrupted supply of affordable drugs, could not be sustained. Most community members had resorted to using herbs and sought care from traditional providers. Burlew et al. (2014) reported the sustained development of the capacity and number of local trainers through continued HIV/AIDS IST in the study assessing sustainability of HIV/AIDS IST by PEPFAR-funded implementing partners. Geographical coverage of over 90% for the distribution of drugs was sustained for the community-directed treatment with ivermectin (CDTI) in Anambra State in the study by Mbanefo et al. (2010).

### Funding for sustainability

Poor funding for post-project continuation is a major challenge for sustainability in Nigeria. Ajayi et al. (2010) noted the failure of the local government and community to render any form of financial support for the distribution of drugs and volunteer stipends at the expiration of the project as pledged 2–3 years earlier. As a result, the attrition rate was very high and volunteers who were still willing were left powerless and disenfranchised. An important constraint to the sustainability of CDTI project in the study in Anambra State was the dearth of 'finance' because no local partner

was willing to accept even minor financial responsibility in the CDTI chain (Mbanefo et al. 2010). The success of implementing partners to secure financial support from the federal government after PEPFAR funding obligations ended led to sustainability of the HIV/AIDS IST project (Burlew et al. 2014).

### Community ownership and capacity development

Community ownership and capacity development were recognised by all the studies as vital for sustainability. Involvement of stakeholders and providing them with a sense of ownership in the interventions were beneficial. Six of the nine aspects of the model protocol used in the study evaluating sustainability of onchocerciasis control had components of community ownership as determinants of project sustainability (Amazigo et al. 2007). They concluded that the community was the best level at which to measure the sustainability of the whole project. In the study assessing the sustainability of home management of malaria (HMM), there was community participation from the start of the project which included determining an affordable price for drugs, distribution point and selection of volunteers; however, non-adherence to the pledge made by the community and primary healthcare unit of the local government to provide continuing support at the expiration of the project led to poor sustainability (Ajayi et al. 2010). The training of government officials, community-based organisations, non-governmental organisations, master trainers, health workers and facility-based staff on HIV/AIDS-related service provision strengthened continued skills transfer and ensured sustainability of the project (Burlew et al. 2014). The success of the Onchocerciasis Control Program to reach its ultimate goal also depended on the degree to which the communities were empowered to take ownership and responsibility for drug distribution (Mbanefo et al. 2010).

### Leadership and governance

Lack of political will and poor leadership were highlighted as major hindrances to sustainability in Nigeria. Ajayi et al. (2010)



noted that the poor supervisory role of health workers and the primary healthcare unit was a barrier to sustainability. The health workers did not perceive their role as supervisors to the community medicine distributors (CMDs) because the research team did not emphasise their leadership role during the study implementation. Burlew et al. (2014) reiterated that the state government's willingness to take over programme implementation after donor exit contributed to its sustainability.

### Effective collaboration/linkages–partnerships

Coordination and collaboration is important for sustainability when two or more donors or partners offer the same intervention or target the same demography. Burlew et al. (2014) reported the overlap in the health interventions from different partners with multiple partners offering the same category of IST within the same state. Ajayi et al. (2010) noted the incessant transfer of trained health workers at the local government level post-implementation of the intervention because of poor collaboration. This high staff turnover rate hindered continuity and affected sustainability.

## Discussion

Post-project evaluation remains an important, but still rare, event in the project cycle. While most international development projects aim and claim sustainability of their interventions, fewer than 1% of development projects are evaluated after funding ends (Cekan & Zivetz 2016; Zivetz et al. 2017). Funding for evaluation usually ends when projects close and there may be little political interest to focus on sustainability as opposed to seeking funding for new programmes.

Organisations may also feel pressured to fit their activities within the funder's priorities leading to donor influence on priority setting and fixed timeframes for implementation, funding and reporting as well as feedback on what could be sustained, how and by whom (Lee & Lim 2014). This reduces the chances of sustainability when donor funding stops.

Domestic financing for health intervention in Nigeria has grown over the years, but still falls below par because budgetary allocation to the health sector is below the 15% minimum contained in the Abuja Declaration (Uzochukwu et al. 2015). This affects the capacity of the government to sustain health interventions when donors leave.

Often, donor funds are used by health programmes to pay for community involvement and participation (Amazigo et al. 2007). This can create an expectation of external support and enthusiasm for cash which may lead to unsustainable development.

Decisions about how long to evaluate sustainability after project close remain highly contextual and no specific deadline exists. However, some authors have suggested waiting at least 2 years from close of project to ensure residual inputs

from the project have ceased (Cekan 2015; Zivetz et al. 2017). None of the studies referenced post-project achievement in terms of original project targets. This raises questions about how organisations select and report on what they evaluate to determine sustainability.

All of the studies reviewed referenced the importance of community ownership and involvement for sustainability. Numerous studies have also corroborated the effectiveness of community participation in the sustainability of health programmes (Anderson, Brown & Jean 2012; Preston, Waugh & Taylor 2009; Rosato et al. 2008). Participants' perspectives about their organisational and initiative-specific sustainability needs and wants onward are pertinent. Sometimes participants are unaware of responsibilities of their own or of their community. In these cases, sensitisation and education could overcome initial apathy and generate community support (Goldberg & Bryant 2012; Preston et al. 2009). Even then, community strengths may not overcome some of the weaknesses further up in the health system.

The importance of building the capacity of programme partners has also been emphasised as part of strengthening health systems and ensuring sustainability (Bennett et al. 2011; Goldberg & Bryant 2012; Sharma et al. 2013). Bennett et al. (2011) reported on how building the capacity of implementing partners such as government staff members, NGO and community through training and mentoring to build their technical and managerial skills helped in the transition of the Avahan HIV Prevention Program in India to local ownership (Bennett et al. 2015). An ex-post report for the Joint Regional HIV/AIDS Project suggested that conditions for sustainability would have been more favourable if there was focus on capacity development in the implementation of activities and the creation of durable mechanisms for cooperation and system performance (GIZ 2012).

Two of the studies reviewed emphasised the importance of leadership, effective linkages, collaboration and partnership for sustainability (Amazigo et al. 2007; Burlew et al. 2014). Other studies have also shown it is necessary to identify opportunities for collaboration between partners to use resources more efficiently, reduce duplication of effort and ensure sustainability (Iwelunmor et al. 2016; Osawa, Kodama & Kundishora 2010).

A TOS developed at the design phase has the benefit of being able to track sustainability. Organisations should have a plan for transitioning to sustainability after projects close (Cekan & Zivetz 2016; Zivetz et al. 2017). This should include handover plans to local nonprofits, with training and financial support; training for communities on how to manage the sustainable activities it prioritises and financing mechanisms for those activities. Some authors have suggested the inclusion of a natural comparison group during post-project evaluation to effectively compare sustained impact (Zivetz et al. 2017). Post-project evaluations should provide

more detailed methodologies and put more focus on direct beneficiary participation in the evaluation process.

A clear understanding of operational indicators for sustainability, embedding sustainability early in the project cycle, country ownership, community involvement, capacity building, effective collaboration and quality post evaluation are key for sustainable development in Nigeria.

Evaluating sustainability of health interventions has the potential to demonstrate the extent to which practices are replicated through anticipated and unanticipated pathways (Zivetz et al. 2017). By identifying unexpected and emerging outcomes that came about post-project – outcomes that were not anticipated in the design – we improve upon our understanding of best practices for sustainability, and ultimately the quality and relevance of the subsequent interventions.

A limitation of this review is the small number of studies included. However, we chose to exclude evaluations done less than 2 years post-implementation and reports without qualitative or quantitative research methods. Secondly, because of heterogeneity in definition or description of sustainability in the studies and assessment of sustainability at a single point in time, we could not compare outcomes and changes over time.

## Conclusion

This review explored the overall body of knowledge on the evaluation of sustainability of health programmes in Nigeria as well as potential facilitators or barriers to the sustainability. We also investigated definitions and methodologies adopted in a range of post-project evaluations for sustainability and how approaches used in evaluation have enhanced or challenged post-project assessment.

There is a dearth of research on evaluation of sustainability which can be seen from the small number of such evaluations relative to hundreds of thousands of health projects implemented in Nigeria. Such evaluations may be seen as too hard, too expensive, not important or just plain unnecessary. Sometimes, when they are done, they may be seen as incriminating, and thus not shared. Further research is required to provide rigorous evidence base to explore evaluation of sustainability in Nigeria. Research should also seek to understand the views of key stakeholders such as donors, implementing partners and government on evaluating for sustainability. This will contribute immensely to the development and implementation of sustainable interventions.

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### Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

F.I. was the lead researcher. J.C. was responsible for reading and editing the work to ensure that proper design and methodology were used and provided expert analysis.

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## Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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