

# **Proof of Influence Evaluation of the Nigeria Evidence-based Health System Initiative (NEHSI)**

**Commissioned by the Evaluation Sub-Committee of the Project Advisory Committee and the Governance for Equity in Health Programme, The International Development Research Centre, Canada.**

**Report written by the Evaluation Technical Advisory Committee**

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## Executive Summary

Between 2008 and 2014, the Government of Nigeria implemented the Nigeria Evidence-based Health System Initiative (NEHSI), with support from Canada's International Development Research Centre (IDRC) and the Department of Foreign Affairs, Trade and Development Canada (DFATD). NEHSI undertook activities to increase the generation and use of evidence for decision-making in Bauchi and Cross River states with the goal of strengthening the health care system to deliver effective, efficient and equitable primary health care (PHC).

In 2012, the Evaluation Sub-Committee of NEHSI's Project Advisory Committee commissioned this evaluation to explore NEHSI's 'proof of influence' by examining its outcomes to answer two questions:

*Evaluation question 1: To what extent and how has NEHSI influenced the evidence-based planning and decision-making (through changes in knowledge use, capacity, habit, and governance processes) in the primary health care system in particular and in the health system in general at the individual, community, and institutional level (federal, Bauchi State, Cross River State, and local government areas (LGA))?*

*Evaluation question 2: Sustainability: To what extent do the NEHSI outcomes achieved to date a) reinforce each other, and b) embody the principles of evidence-based planning and decision-making in the Nigerian primary health care system?*

The evaluation team, which was advised by IDRC and the Evaluation Sub-Committee, comprised two independent consultants and one IDRC-NEHSI Senior Advisor. The team used the Outcome Harvesting approach - a tool for identifying and understanding results in complex circumstances. The team harvested 294 outcomes made up of 81 derived from documents and consultations (71 at the institutional level - federal, state or local government - and 10 at the community level) and 213 community and individual outcomes derived from stories that NEHSI had previously obtained from individuals living in the project catchment areas. The team checked the accuracy of each outcome, its significance, and NEHSI's contribution with NEHSI stakeholders, recorded its source, and classified it to provide the information required to answer the two questions.

The actors responsible for the outcomes at the institutional level were: state level agencies (health, budget, and planning), LGAs, the Federal Department of Planning Research and Statistics, and the National Council for Health. At the community and individual levels people responsible for outcomes included chiefs, community leaders, health workers, women, men, wives and husbands.

### In terms of evaluation question 1:

Almost seventy percent of the 71 outcomes at the institutional level demonstrated *use of evidence and data to inform planning, decision-making and/or actions (knowledge)*. Half of these outcomes already involved use or sharing of evidence during the time of the project, a third were associated with capacity building for data collection and analysis, and the remainder with support for evidence generation. The pattern was similar across both states. This suggests that with continued support for evidence generation and as institutional capacity builds, use of evidence could increase after the close of the project.

Almost eighty percent of the 71 institutional outcomes were associated with *changes in governance processes*. These changes were different across the two states but involved the development of plans,

strategy and policies; budget formulation, approval and allocation; formulation of procedures, programmes, units or committees; and the allocation of human resources. These findings demonstrate considerable institutional support, mostly at the state level but also from the local governments and in one case of two actors at the federal level.

Changes in capacity and habit at the institutional level were almost entirely associated with changes in knowledge. Capacity and habit were built in the areas of data collection, management and analysis and in the use of evidence.

The pattern of outcomes at *the community and individual levels* was distinctly different from that at the institutional level – with a reversal of proportions between *knowledge* (32% compared to institutional at 76%) and *habit* (67% compared to institutional at 12%). A quarter of the community and individual outcomes involved use of the health system, and about 40% involved knowledge of risk factors. These findings imply recognition of the importance of understanding and demanding healthcare in the project areas.

There are many contributing factors to any outcomes but NEHSI's contribution to the 294 outcomes came from three of its components: the Multi Stakeholder Information and Planning System (MSS), the Health and Demographic Surveillance System (HDSS), and the Community Surveillance System (CSS). No outcomes arose from the Sustainable Human Capital (SHC) component which was operational in each state and only one outcome resulted from the Linkages, Opportunities and Sustainability (LOS) component which was operational at the federal level.

#### In terms of evaluation question 2:

NEHSI has not contributed sustainability outcomes at the federal level and only two outcomes represented inter-state collaboration. It is at the state level where significant inroads have been made towards enduring institutional change.

In Bauchi State, 17 out of 33 outcomes contributed to the sustainability of evidenced-based planning and decision-making in the Nigerian PHC system clustered under use of a social audit for planning and budgeting; and the development of institutional capacity. In Cross River State, 15 out of 26 were sustainability outcomes, of which nine were changes that involved the social audit and six involved the HDSS.

In conclusion, the evaluation team viewed NEHSI's achievements against the health information system framework developed by the Health Metrics Network. NEHSI made major contributions under some of the components required for a strong health information system. Through the implementation of its approach, NEHSI's outcomes demonstrate proof that sustainable changes can be influenced to generate evidence and use evidence for decision-making and actions across multiple levels of responsibilities.

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## Abbreviations

CHEW Community Health Extension Worker

CIET Community Information, Empowerment and Transparency

CR-SWSAP Cross River State Sector-Wide Social Audit Programme

CSIA Capacity Strengthening for Information Access

CSS Community Surveillance System

DFATD Department of Foreign Affairs, Trade and Development Canada

DSA Demographic Surveillance Area

FMOH Federal Ministry of Health

HDSS Health and Demographic Surveillance System

HMN Health Metrics Network

IDRC International Development Research Centre

JCHEW Junior Community Health Extension Worker

LGA Local Government Area

MDGs Millennium Development Goals

MSC Most significant change

MSS Multi-stakeholder Information and Planning System

NEHSI Nigeria Evidence-based Health System Initiative

NHMIS National Health Management Information System

NSHDP National Strategic Health Development Plan

OH Outcome Harvesting

PAC Project Advisory Committee

PHC Primary Health Care

PHCDA Primary Health Care Development Agency

SEPA Socialising Evidence for Participatory Action

SHC Sustainable Human Capital for Evidence-based Planning

SMOH State Ministry of Health

SPHCDA State Primary Health Care Development Agency

TechCom NEHSI Evaluation Technical Advisory Committee

UNICAL University of Calabar

# Background to the study

## 1.1 Introduction

Between 2008 and 2014, the Government of Nigeria implemented the Nigeria Evidence-based Health System Initiative (NEHSI). The project, aimed at increasing the use of evidence for decision-making, received support from the Canada's International Development Research Centre (IDRC) and the Department of Foreign Affairs, Trade and Development Canada (DFATD). As NEHSI neared its conclusion in 2012, the Evaluation Sub-Committee<sup>1</sup> of NEHSI's Project Advisory Committee (PAC) commissioned an evaluation to examine its outcomes and their evidence of future sustainability.

NEHSI's stakeholders believe that lessons learned from the initiative will be of interest to the two states, other Nigerian states for possible replication, and the international community as a demonstrated pathway to strengthen evidence generation and use to improve the performance of health systems. Hence NEHSI is being evaluated in a number of ways, through: 1) the Outcome Harvesting Proof of Influence evaluation for sustainability, which is the topic of this report; 2) Monitoring for Planning, being undertaken by IDRC based on day-to-day review of implementation processes; 3) the Proof of Impact, being undertaken by the project itself to measure the health outcomes attributable to NEHSI; and 4) the Logic Model and Program Management Framework which are monitoring tools.

The goal of this Proof of Influence evaluation was to harvest the outcomes of the project to answer the following two questions:

- *Evaluation question 1: To what extent and how has NEHSI influenced the evidence-based planning and decision-making (through changes in knowledge use, capacities, habit, and governance processes) in the primary health care system (PHC) in particular and in the health system in general at the individual, community, and institutional level (federal, Bauchi State, Cross River State, and local government area (LGA))?*
- *Evaluation question 2: Sustainability: To what extent do the NEHSI outcomes achieved to date a) reinforce each other, and b) embody the principles of evidence-based planning and decision-making in the Nigerian PHC system?*

The evaluation was undertaken by internal and external evaluators with considerable participation by the Evaluation Sub-Committee and IDRC, but the report was written by two external and one internal evaluation experts (see Appendix 1 for their bios). The evaluators used a modified Outcome Harvesting (OH) approach - a qualitative method through which stakeholders provide and substantiate the outcomes of the project.

The report introduces the evaluation questions, provides the background and context for the project, its objectives and theory of change (Section 1). Section 2 describes the key players and the activities for which they were responsible, the process by which the evaluation was undertaken, how the OH approach was modified and the limitations of the process used. Section 3 describes and synthesizes the findings of

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<sup>1</sup> Composed of IDRC, DFATD, NEHSI project team and NEHSI stakeholders from the Bauchi and Cross River States.

the evaluation and Section 4 interprets the findings to answer the two evaluation questions. Section 5 concludes with the evaluators' assessment of what NEHSI's outcomes have contributed to the information systems in Bauchi and Cross River states from the perspective of the Health Metrics Network (HMN) Framework.

## **1.2 The Nigeria Evidence-based Health System Initiative (NEHSI)**

### **1.2.1 Background**

The health care delivery system in Nigeria is the responsibility of its three tiers of government: federal, state (36 states) and local government areas (744 LGAs). The private sector plays a very visible role, accounting for about 60% of healthcare delivery, more so in the urban than rural areas. Nigeria's health status measured by key health indicators such as infant, under-5 years and maternal mortality rates and the prevalence of a number of key disease conditions are not only poor but below the average for sub-Saharan African countries.<sup>2</sup> Significant investments in improvement are needed to meet national targets.

Nigeria's National Strategic Health Development Plan (NSHDP) provides the compass for the development of a results-based health system, with emphasis on a cost-effective, efficient and fair PHC system.<sup>3</sup> The NSHDP, among other things, aims to entrench evidence-based measures to improve and monitor the performance of the health system, including accountability and transparency.

In 2005, the Federal Government, in collaboration with DFATD and IDRC, initiated wide-ranging consultations to explore how to improve evidence-based decision-making. Focusing on the states of Bauchi and Cross River, the discussions, over a two year period, revealed significant gaps in information needed by decision-makers, front line workers, communities and donors for planning, delivering, and measuring the impact of PHC programs. Above all, there was a pressing need to build and strengthen a culture of evidence-based responsive PHC.

These pre-inception consultations informed the creation of NEHSI in 2008, underscoring the importance of: 1) engaging stakeholders from the start; 2) facilitating local ownership at every stage; 3) working to improve the system from within rather than creating parallel structures; 4) understanding and being able to assess existing capacities; 5) recognizing institutional strengths and weaknesses as well as the inherent political realities; and 6) understanding the logistics and resource constraints necessary to implement such an initiative.

### **1.2.2 Goal and principles of NEHSI**

The main goal of NEHSI was to contribute to the strengthening of the health care system to deliver effective, efficient and equitable PHC in Bauchi and Cross River states. Ultimately, this was to ensure better health outcomes for the citizens of these two states, through improving the health information

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<sup>2</sup> Federal Ministry of Health: Accelerating Progress to Achieve the Health Millennium Development Goals in Nigeria. Harmonized Country Plan of Priority Interventions for 2014-2015

<sup>3</sup> Federal Ministry of Health: National Strategic Health Development Plan, 2010 – 2015. December 2010.

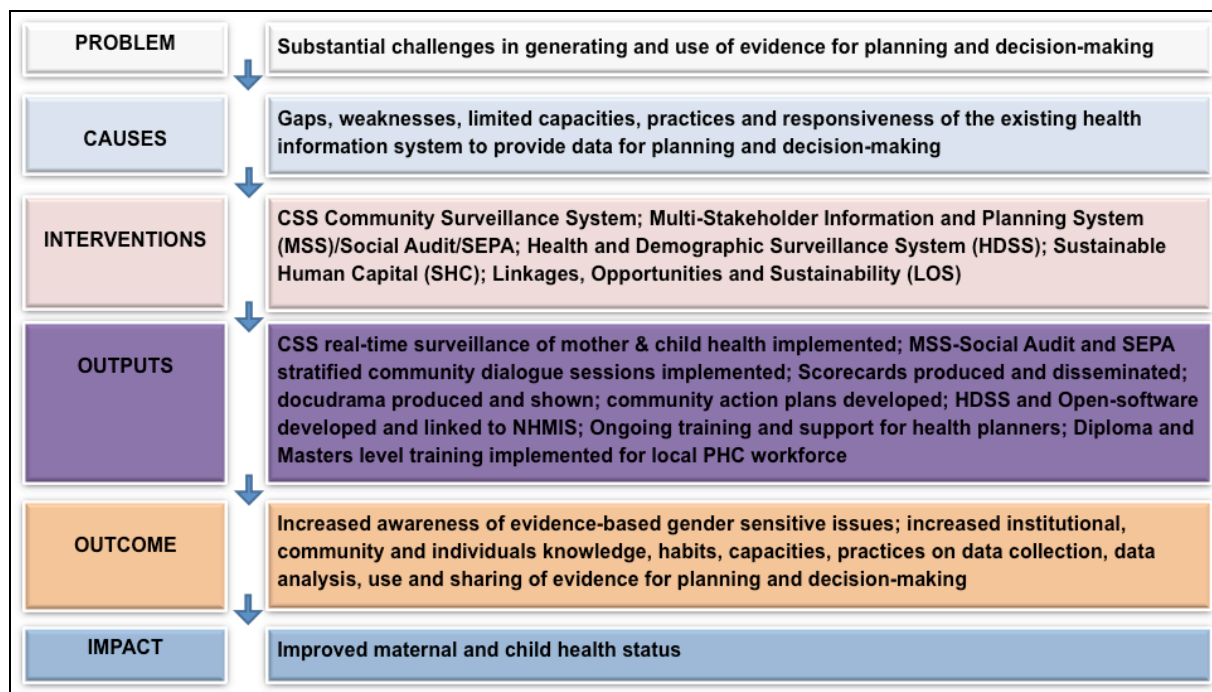
system, strengthening capacity to use the evidence and linking the evidence to planning and allocating resources to make a difference in people’s health.

By working towards improving the health information system, NEHSI was premised on the following principles:

- Data contributes to development: Data not only document the state of development, but contribute to it. Having good information is the cornerstone to developing solutions.
- Affordability and sustainability: In resource-limited settings, an important criterion is sustainability, which ensures that all aspects of affordability have been considered.
- Linking and integrating different sources and types of data: Data need to be pooled and integrated between levels for effective planning at the LGA, state and federal levels.
- Building on and strengthening existing capacities: This ensures that the people and institutions with the responsibility to collect, analyse, interpret and use data would take ownership and can function optimally.

NEHSI’s theory of change (Figure 1.1) is based on these four principles and outlines pathways to address the challenges to the health information system, with a vision of intended results (outcomes and impacts). By implementing the various project design methodologies, sustainable solutions would be found to the problems of generating and using evidence for planning, decision-making and action. Figure 1.2 shows which components NEHSI were implemented in each state and federally.

**Figure 1.1: NEHSI’s theory of change**





### 1.2.3 Design of NEHSI

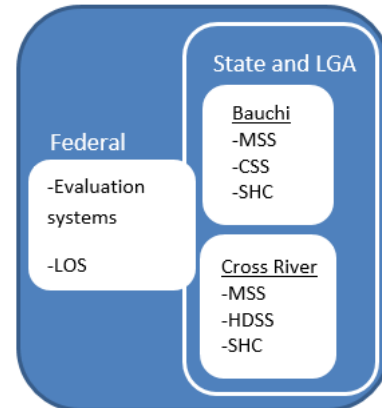
The design of NEHSI was based around four inter-linked strategies that strengthen: 1) health information systems; 2) community participation and engagement; 3) institutional capacity; and 4) local ownership and scale-up. These strategies found expression in six strategic components through which NEHSI's activities were undertaken (see Appendix 2 for more details of each component).

- Multi-Stakeholder Information and Planning System (MSS): A social audit methodology driven component of NEHSI. It was NEHSI's primary building block for state wide data collection and socialisation of results for planning and decision-making.

The MSS had two phases: a data generation phase known as the Social Audit, and a phase for feeding evidence back into the various PHC sub-systems known as Socialising the Evidence for Participatory Action (SEPA)

- The Health and Demographic Surveillance System (HDSS): NEHSI's adaptation of a common method of collecting data on key demographic events (births and deaths) and some burden of disease indicators in places with weak or no health information systems. This was implemented in tandem with the existing National Health Management Information System (NHMIS), including the creation of the Open Health and Demographic Software, for the exchange of data with the NHMIS.
- Community Surveillance System (CSS) was developed as a response to a request by Bauchi State for a surveillance system that would focus on priority health problems identified by the state through MSS. The CSS collected data on pregnant women and young children to improve planning on maternal and child health, and brought PHC to doorsteps.
- The Sustainable Human Capital (SHC) component of NEHSI was a key part of the project's sustainability strategy. Its main focus was to train and retain LGA resident planners, skilled in using evidence.
- The Linkages, Opportunities and Sustainability (LOS) component allowed NEHSI, as an implementation-research project, to be flexible in taking advantages of opportunities to respond to needed gaps and opportunities that would build synergies in fostering use of evidence for decision-making in strengthening the PHC system.

**Figure 1.2: NEHSI components**



## **2. Methodology**

### **2.1 Responsibilities for the evaluation**

This evaluation was planned to be a “country led Proof of Influence evaluation that assessed the sustainability of the NEHSI approach (and supports an exit strategy) that leaves Nigeria with the habit, capacities, knowledge and governance to strengthen its PHC system”.<sup>4</sup> The evaluation was to be undertaken by a Nigerian evaluation team commissioned by the Evaluation Sub-Committee. IDRC appointed one national (Muhammed Lecky) and one international technical advisor (Sarah Macfarlane) to advise on the process.

In September 2012, after reviewing responses to a tender, and on the advice of the Evaluation Sub-Committee, IDRC commissioned Health Systems Consult Ltd (HSCL), a Nigerian consultancy firm, to undertake the evaluation. IDRC proposed the OH approach and hosted a meeting in Washington in December 2012 to discuss and agree the methodology. IDRC invited Ricardo Wilson-Grau (RW-G), the creator of the OH approach, to attend the meeting. HSCL, IDRC, the two technical advisors and RW-G agreed that the approach could be used to answer the two questions.<sup>5</sup> IDRC appointed RW-G to join the two advisors and the group became known as TechCom (the authors of this report).

HSCL mobilised a four-member team supported by three interns to carry out the evaluation. By September 2013, the original date for submission of the final evaluation report, due to innumerable problems and delays, the collection of data was still incomplete.<sup>6</sup> After two months of further delays, in November 2013 IDRC and HSCL agreed to end the evaluation contract.

Following the withdrawal of HSCL as evaluators, TechCom offered to take the evaluation findings generated by HSCL to reasonable completion, albeit no longer an evaluation conducted fully by a Nigerian team. We offered to complete the harvest of outcomes and to use those findings to answer the two evaluation questions. The Evaluation Sub-Committee, as the primary intended users of the evaluation, accepted the proposal. They judged that a TechCom wrap-up of the evaluation would be useful for them and for other users, such as LGA stakeholders and community leaders. An extended audience including other development partners, other states and LGAs would also find the results of interest.

### **2.2 Evaluation approach**

OH is a tool for identifying and understanding results in complex circumstances such as NEHSI and its environment (See Appendix 3 for a description of the OH approach). In substantially complex situations the link between inputs, activities and outputs, on the one hand, and outcomes on the other, are unknown in advance. The use of OH ensured that the evaluation focused on outcomes rather than project outputs, and allowed HSCL and TechCom to identify unintended outcomes and probe for other information of

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<sup>4</sup> Original HSCL terms of reference. See Revised NESHI Evaluation Design\_HSCL April 02 2013.

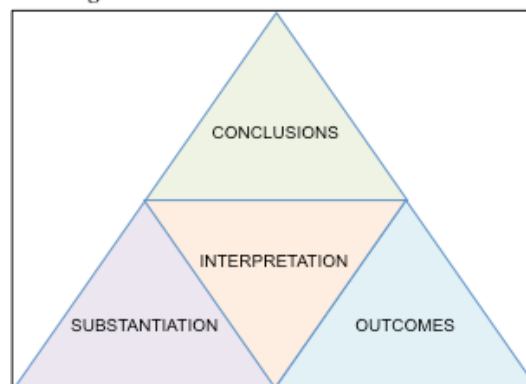
<sup>5</sup> There were four evaluation questions, the additional two dealing with replicability and scalability, could not be answered using outcomes.

<sup>6</sup> HSCL had identified and formulated 37 outcomes and identified 13 additional potential outcomes.

interest, namely, the significance of each outcome. From the evidence we gathered of what has been achieved ('outcomes'), we worked backward to determine whether and how NEHSI contributed to the change.

The findings presented in this report have four dimensions (Figure 2.1): 1) the outcomes harvested from sources described in Section 2.3; 2) substantiation of the outcomes by consultation with NEHSI stakeholders in meetings also described in Section 2.3; 3) our interpretation in answering the two evaluation questions described in Section 4; and 4) presentation of our conclusions described in Section 5.

**Figure 2.1: Structure of NEHSI evaluation findings**



### 2.3 The harvest

Between June and September 2013, HSCL identified and formulated 50 potential outcomes from those who know best what changes NEHSI has influenced. HSCL:

- Reviewed NEHSI reports and other documentation (PAC meeting notes, budget notes from Cross River and Bauchi, project performance reports, NEHSI quotes, and nine semi-annual reports (2008 – 2013); and
- Engaged via email and telephone with representatives of IDRC,<sup>7</sup> the Community Information, Empowerment and Transparency Trust (CIET)<sup>8</sup> and the universities of Calabar (Nigeria), and Southern Maine (United States), all organizers or implementers of NEHSI.

After TechCom took over in November 2013, we:

- Engaged with the Evaluation Sub-Committee and other NEHSI stakeholders by email and telephone; and
- Consulted with stakeholders at a February 2014 meeting in Abuja, and March 2014 meetings in Bauchi and Cross River states, and regularly with IDRC.

The final harvest from the above sources resulted in 81 outcomes. Seventy one of these outcomes were at the institutional level (federal, state or LGA) and 10 at the community level.

A further 93 community and 120 individual level outcomes were derived from CIET's Most Significant Change (MSC) stories. In September 2012, CIET had designed an extensive field exercise to collect and document stories of individual and communal changes within communities across each of the focus LGAs

<sup>7</sup> IDRC strategic advisors in-country (Muhammed Lecky and A.A. Othman) and programme staff in Ottawa (Heidi Monk, Sharmila Mhatre, Fernando Santiago and Amy Etherington).

<sup>8</sup> The Community Information, Empowerment and Transparency Trust (CIET) is an international group of non-profit, non-governmental organizations, academic institutes, charities, foundations and trusts dedicated to building the community voice into planning and good governance.

in both Bauchi and Cross River states.<sup>9</sup> Field teams talked to community members who had participated in community action planning groups and those who were enrolled for household visits. Field workers documented these stories against the story teller's name and location. For the purposes of this evaluation, Heidi Monk of IDRC extracted 213 MSC outcomes from the transcripts of these 129 stories covering the period 2008 to 2012. TechCom excluded 20 outcomes that occurred before 2010 because NEHSI's intervention in the communities began that year.

In summary, the total harvest of 294 outcomes consisted of 81 derived from documents and consultations (71 institutional and 10 community) and 213 derived from the MSC stories. Appendix 4 provides the names of people consulted during the harvesting. Appendix 5 (in a separate document) provides the full list of outcomes.

## 2.4 Description of the outcomes

The OH approach requires that the outcomes be formulated in brief, succinct descriptions that are sufficiently concrete and specific to be verifiable.<sup>10</sup> We described the outcomes in four dimensions:

- **The outcome:** *When and where did who do what* that was new or different.
- **Contribution of NEHSI:** The concrete, plausible NEHSI actions that influenced the change, however small, indirect or unintentional it was.
- **Significance of the outcome:** The outcome's potential to lead to, or have already led to, strengthened evidence-based planning and decision-making.
- **Source:** The documents or actors that provided the information.

HSCL and TechCom described each dimension of the 81 outcomes derived from documents and consultations in one or two sentences (see example in Box 2.1). We created one overall paragraph statement of NEHSI's contribution to the 213 outcomes that were extracted from the MSC stories. On the advice of the Evaluation Sub-Committee, we classified the significance of these MSC outcomes as in Table 2.1, rather than describing them in a narrative as for the other 81 outcomes.

### BOX 2.1: Example description of outcome 18

**Outcome:** In June 2012, the Bauchi State Ministry of Budget and Economic Planning decided to provide early processing and swift approval of budgets that justified expenditures using social audit data.

**NEHSI Contribution:** NEHSI developed and promoted the use of the social audit approach and score card which has now been adopted by the Bauchi state.

**Significance of the outcome:** This confirmed the Bauchi State Ministry of Budget and Economic Planning's understanding of Multi-stakeholder Information and Planning System's (MSS) evidence and acceptance of their role in coordinating/facilitating the use of the evidence generated in the MSS (social audits). This significance is in line with NEHSI's goal of strengthening local ownership and understanding of the NEHSI's tools for scaling up.

<sup>9</sup> CIET carried out the MSS, CSS and SHC components of NEHSI. The MSC stories were on changes related to the first social audit and socialisation of evidence – it did not capture anything related to the 2nd and 3rd cycles which were done later. CIET agreed to share these stories with the evaluators. For further information: <http://nigeria.cietresearch.org/most-significant-change/>.

<sup>10</sup> It is important that the detail on all outcomes be similar since the reader will understandably expect the same level of specificity.

## 2.5 Classification of the outcomes

We classified all the outcomes according to the categories required to answer the two evaluation questions, as shown in Table 2.1.

TechCom agreed with the Evaluation Sub-Committee the definitions for the classifications of type of change (Table 2.2). It was the three members of TechCom, however, who actually classified the outcomes. Naturally there is a strong element of subjectivity in some of the classifications and undoubtedly different people would classify some differently. For example, we strictly applied the definition for ‘knowledge use’ when the outcome itself indicated use of such evidence; we did not speculate about the influence of such evidence *on* the outcome.

**Table 2.1 Classification of outcomes to answer the evaluation questions**

<b>Year the change took place</b>	<b>Administrative level at which the change took place</b>	<b>Type of change</b>
2010	Federal	Knowledge use
2011	Bauchi state	Capacity
2013	Cross River state	Habit
2014	Inter-state	Governance process
	Local government area	
	Community	
	Individual	
<b>Significance of the community and individual level outcomes</b>	<b>Outcomes classified as knowledge use</b>	<b>Outcomes classified as change in governance process.</b>
Spousal relations	Support for evidence generation	Development of plans, strategy or policies
Inter-personal violence	Data collection, management and analysis	Budget formulation, approval or allocation
Physical labour during pregnancy	Use of evidence	Formulation of a programme, procedure, unit or committee
Knowledge of risk factors	Sharing of evidence	Allocation of human resources
Use of health system		

**Table 2.2 Definitions of types of change**

<b>Category</b>	<b>Definition</b>
Knowledge use	Demonstrates use of evidence and data to inform planning, decisions-making and/or actions.
Capacity	Demonstrates first time change in abilities to undertake certain new functions or to function differently either at home, in a community or in a workplace.
Habit	Demonstrates repeated change in behaviours or practices.

Governance process	Demonstrates change in the organization or in the exercise of power.
Other	Any change that does not fit into the four categories above.

To answer evaluation question 2, we classified as “sustainability outcomes” the outcomes that both: 1) reinforced one or more other outcomes; and 2) embodied one of three principles of evidence-based planning and decision-making in the Nigerian PHC system.

First, we identified outcomes that had in common the subject of a change or the change itself of behaviour, relationships, policies or practices. For example, in Bauchi in 2012, outcome 18 described above and outcome 22 — *In July 2012, the Bauchi Primary Health Care Development Agency (PHCDA) earmarked N17 million to support an annual benchmark survey to generate information on key indicators to assess movement toward improved health care and adopt social audit methods and tools (scorecards in particular) for the three social audit cycles.* — involved different actors but both had in common funding for the social audit. Therefore, we considered they were reinforcing one of the other and met the first criteria of sustainability.

Second, we agreed the appropriate principles to be evidence in the outcome description of:

- Well-funded data/health information systems
- Use of policy, regulations and/or formalized protocols/processes
- Planners and decision-makers must demand evidence

In the example, both outcomes 18 and 22 incorporated the first principle. Consequently, both outcomes were considered “sustainability outcomes”, along with others in prior or subsequent years that met both criteria.

## 2.6 Methodological considerations

Outcomes evaluation is not a process of scientific research. Nonetheless, although the criteria are different for evaluations, they are no less rigorous than for scientific research. Throughout the NEHSI evaluation, including the phase when TechCom was solely advising HSCL, the evaluation was guided by the four standards of evaluation of the African Evaluation Association<sup>11</sup>, which are fairly well accepted world-wide:

- Propriety: Ensure that the evaluation is conducted legally, ethically, and with due regard for the welfare of those involved in the evaluation, as well as those affected by its results.
- Utility: Ensure that the evaluation serves the information needs of intended users and be owned by them<sup>12</sup>.
- Feasibility: Ensure that the evaluation is realistic, prudent, diplomatic, and frugal.
- Accuracy: Ensure that the evaluation reveals and conveys technically adequate information about the features that determine worth or merit of the programme being evaluated.

<sup>11</sup> African Evaluation Association Evaluation Guidelines, 2002.

<sup>12</sup> The formal guidelines say “stakeholders”, which for this evaluation we interpret to be the Evaluation Sub-Committee.

The concept of an “outcome” was relatively new for informants. Because of time, resource and distance constraints, as well as the breakdown in the HSCL-led evaluation process, the evaluators had to harvest outcomes virtually, which proved to be difficult for some informants. The three meetings described above greatly enriched the accuracy and understanding of the outcomes.

There are two questions about the accuracy of the outcomes:

One is that all the sources were internal to NEHSI. Normally in OH, a selection of outcomes is substantiated with third parties who are independent - in this case of NEHSI - but knowledgeable about the outcome. The substantiators also go on record about the extent to which they agreed with the outcome formulations (description, contribution of NEHSI and the outcome’s significance). The authority, independence and absence of a conflict of interest of these people in relation to the outcome they substantiate add another dimension of accuracy and credibility to the outcomes. In the NEHSI evaluation the substantiation was not done for several reasons. One was the lack of time and financial resources after HSCL withdrew from the evaluation. Another was that the sources of the institutional outcomes were often representatives of the subjects of those outcomes and thus in effect substantiated them. For example, Abdullahi Abdulkadir, and Garba A Ilu, HMIS /Monitoring and Evaluation Officer, Bauchi State Primary Health Care Development Agency (SPHCDA) (outcomes 15, 19, 20, 22, 62, 63, 310, 311, 312, 313, 325 and 327) and Sani A Malami, Commissioner for Health, Bauchi State Ministry of Health (SMOH) (outcomes 1, 7, 10, 11, 13, 20, 21, 26, 66, 310, 314 and 319). Lastly, two-thirds of the institutional outcomes had two or more sources.

The second question is the reliance on one source for all the individual and community level outcomes, which were based on a CIET study. For the 71 institutional (federal, state and LGA) outcomes, a third were from one source, another third from two and 25 from three or more sources. For example, outcome 18 cited above had two sources: the NEHSI Semi-annual progress report No. 19 and Dr Khalid Omar of CIET.

In the light of these two questions, the credibility of the 294 outcomes harvested resides in the following:

- The informants reporting outcomes are people who are knowledgeable about the outcome and went on record with their views of what changed, how NEHSI contributed and each outcome’s significance.
- These informants went on record with outcomes that they knew could then be subjected to external verification.
- Initially the HSCL evaluators and then the two TechCom members without a vested interest in NEHSI<sup>13</sup> rigorously examined the outcomes for a plausible rationale between what was reported as achieved and the reported contribution of NEHSI.
- All the federal and state level outcomes were reviewed and approved by groups of NEHSI stakeholders convened in the three meetings.

In sum, these weaknesses and strengths were discussed with the Evaluation Sub-Committee who agreed that the outcomes were sufficiently credible for their uses of the evaluation.

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<sup>13</sup> Sarah Macfarlane and Ricardo Wilson-Grau. Muhammed Lecky is an IDRC-NEHSI Senior Advisor.

### 3. The outcomes

#### 3.1 Overview of the outcomes

Of the total 294 outcomes harvested, 71 were at the institutional level, 103 at the community, and 120 at the individual level (Table 3.1). Of the 71 institutional outcomes, three were at the federal level, 57 at the state level (two of which were inter-state) and 11 at the local government level. There were differences in the number of outcomes between the two states, although the numbers per se do not reflect comparative success across the two states.

The MSC stories were collected in 2012 and so refer only to 2010 to 2012 while the remaining outcomes distributed across the five years with the over 50% being in 2012 and 2013 and 18% being in the first three months of 2014.

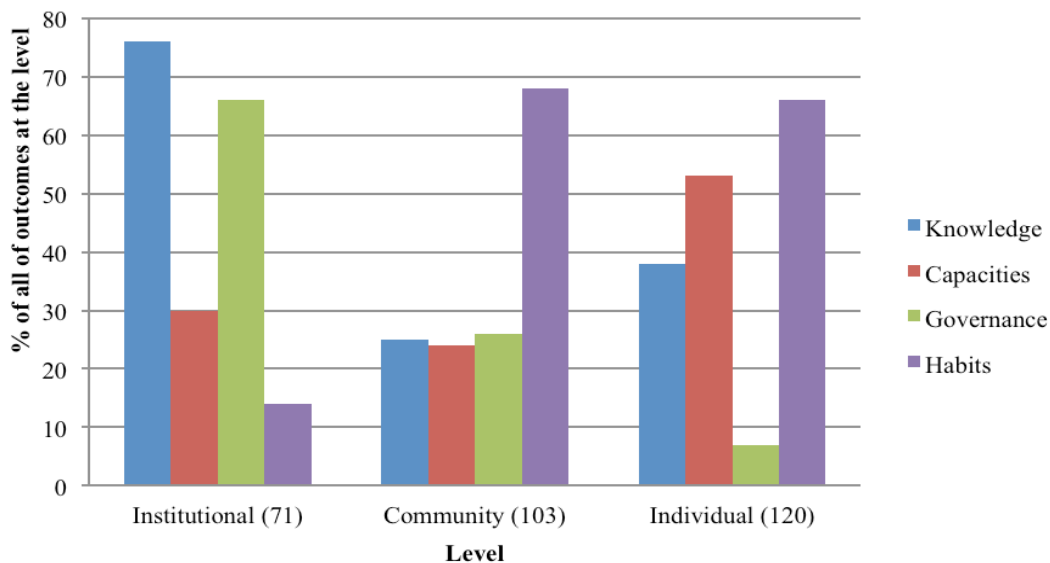
Year	Institutional					All institutional	Community	Individual	Total
	Federal	Inter-state	Bauchi state	Cross River state	Local government area				
<b>2010</b>	1	1	5	1	3	11	69	76	<b>156</b>
<b>2011</b>			3	2	3	8	25	33	<b>66</b>
<b>2012</b>		1	10	5	2	18	8	11	<b>37</b>
<b>2013</b>			5	13	3	21	1		<b>22</b>
<b>2014<sup>1</sup></b>	2		8	3		13			<b>13</b>
<b>Total</b>	<b>3</b>	<b>2<sup>2</sup></b>	<b>31</b>	<b>24</b>	<b>11<sup>3</sup></b>	<b>71<sup>4</sup></b>	<b>103<sup>5</sup></b>	<b>120<sup>6</sup></b>	<b>294</b>

<sup>1</sup> Outcomes were recorded up until March 2014; <sup>2</sup> These two outcomes were achieved jointly by the two states; <sup>3</sup> Ten of these outcomes were in Bauchi and one in Cross River; <sup>4</sup> All from documents and consultations; <sup>5</sup> Ten from documents and consultations and ninety three from MSC stories; <sup>6</sup> All from MSC stories.

The pattern of changes reflected the levels at which they occurred (Figure 3.1). At the *institutional level*, the highest proportion of outcomes (76%) demonstrated use of evidence and data to inform planning, decision-making and/or actions (knowledge) and changes in governance processes (66%) compared to changes in capacity (30%) and habit (14%). At the *community level*, the highest proportion of outcomes demonstrated changes in habit (68%), more than double those that showed the other types of changes (each approximately 25% each). At the *individual level*, the highest proportion of changes was also in habit (66%) but with 53% changes in capacity, 38% changes in knowledge and only 7% changes in governance processes.



**Figure 3.1: Type of NEHSI outcome change by level**



### 3.2 Outcomes at the institutional level

<b>Box 3.1: Example outcomes at the institutional level</b>	
<b>Knowledge</b>	<b>Capacity</b>
<i>(10) In March 2011, the Bauchi State Ministry of Health (SMOH) prioritised integrated management of childhood diseases (IMCI) as the topic for the second social audit cycle. The SMOH based its decision on the gains from the use of evidence from the Multi-stakeholder Information and Planning System program in the previous cycle.</i>	<i>(325) Since 2010, the Bauchi State Primary Health Care Development Agency has improved the quality of monitoring and documentation of the Maternal Neonatal and Child health week, a major national strategy response to maternal and child health during which observance and quality are major issues for effectiveness.</i>
<b>Governance</b>	<b>Habit</b>
<i>(38) In March 2013 the State Planning Commission initiated the establishment of the Cross River State Sector-Wide Social Audit Programme (CR-SWSAP) to sustain the NEHSI approach in the State.</i>	<i>(70) In October 2013, the Cross River State Government declared that evidence collected through NEHSI is informing the health component of the CRS government 7-point development agenda geared towards MDGs 4, 5 and 6.</i>

### 3.2.1 Types of actors

The actors who initiated the 71 institutional outcomes were at local government, state and federal levels.

These included for Bauchi: the State Hospital Management Board, SPHCDA, State Bauchi Agency for Control of Aids, Tuberculosis and Malaria, State Ministry of Budget and Economic Planning, members of the SMOH, State Planning Commission, television and radio stations and LGAs.

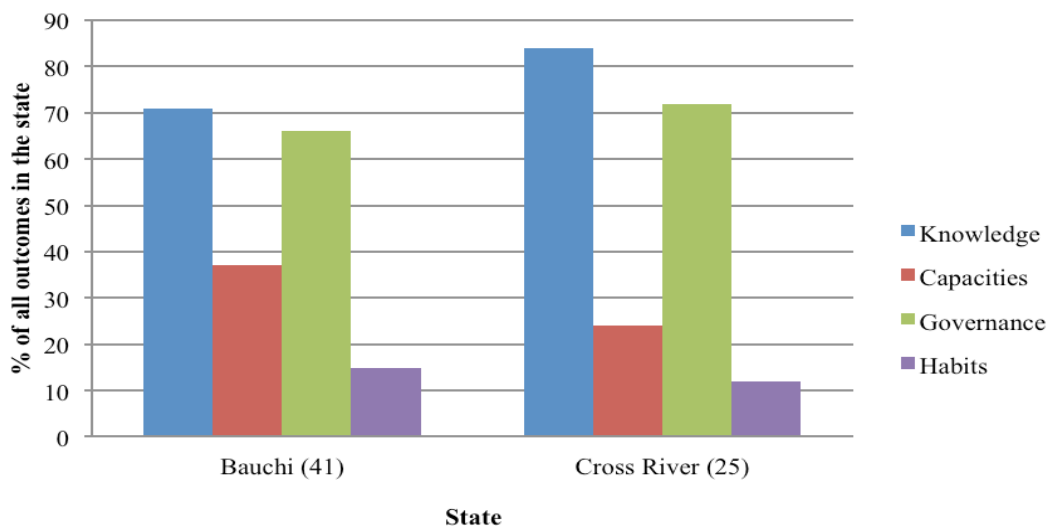
For Cross River state the changes that represent outcomes were undertaken by the Cross River-State Wide Social Audit Programme (CR-SWSAP), State Government, SMOH, State Executive Council, State Planning Commission, and LGAs.

At the federal level, actors who influenced the three changes were the Deputy Director of the Federal Department of Planning Research and Statistics and the National Council for Health.

### 3.2.2 Types of outcomes:

Figure 3.2 shows that the pattern of the distribution of types of outcomes at the institutional level was similar for Bauchi and Cross River; that is predominantly change in knowledge use and governance process.

**Figure 3.2: Type of institutional change by state**



(NB LGA outcomes are included but the two interstate and three federal outcomes are not included in this figure)

Fifty-four of the 71 institutional outcomes showed use of evidence and *data to inform planning, decision-making and/or actions (knowledge)*. Eleven of the remaining 17 outcomes demonstrated changes in governance processes, two showed a change in habit, and five could not be classified into any of the four categories (Table 3.2). We decided that to answer the first evaluation question, it would be most useful to explore: 1) the 54 outcomes that showed knowledge use and their classifications into the other categories (Section 3.2.3); and 2) the 47 outcomes that showed change in governance processes (Section 3.2.4).

<b>Knowledge use</b>	<b>Knowledge use alone</b>	<b>Capacity</b>	<b>Governance process</b>	<b>Habit</b>	<b>Other</b>	<b>Total number of outcomes<sup>1</sup></b>
Outcomes that demonstrated knowledge use	10	21	36	8	0	<b>54</b>
Outcomes that didn't demonstrate knowledge use		0	11	2	5	<b>17</b>
<b>Total</b>	<b>10</b>	<b>21</b>	<b>47</b>	<b>10</b>	<b>5</b>	<b>71</b>

<sup>1</sup>Some outcomes were classified into more than one category

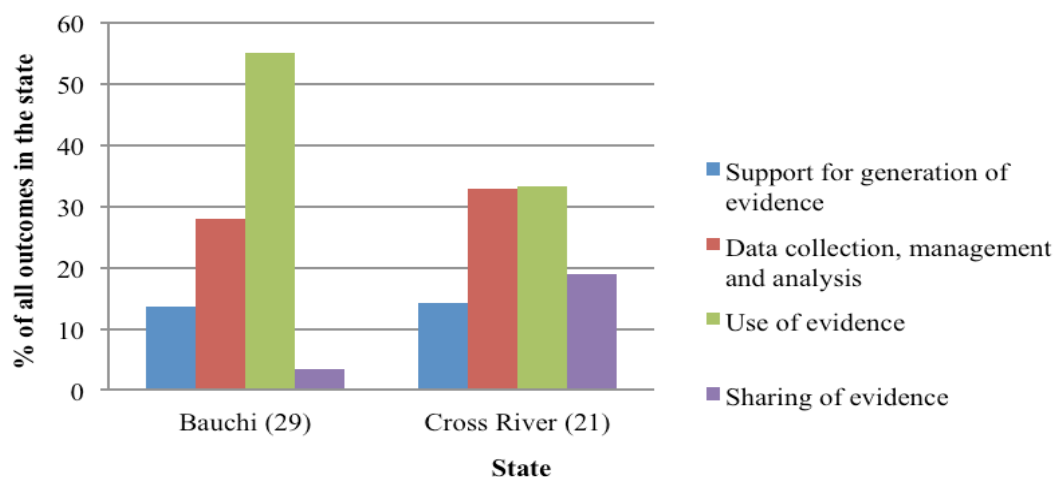
### 3.2.3 Knowledge use

In Table 3.3 we classified the 54 outcomes that showed knowledge into those associated with: 1) support for evidence generation; 2) data collection and analysis; 3) use of evidence; and 4) sharing of evidence. Table 3.3 also shows and illustrates how NEHSI contributed to the achievement of these outcomes. Figure 3.3 shows how the outcomes distributed by state. In both states, there is a clear progression from support for evidence building, through data collection and analysis, to use and sharing of data. If the categories of use and sharing of evidence are combined then the patterns in the two states are very similar. Table 3.3 also shows, for these 54 outcomes, the categories in which capacity and habit were built and in which categories government processes changed. Nineteen out of 21 outcomes that demonstrated capacity and six out of the eight outcomes that demonstrated habit were built in the areas of data collection, management and analysis, and in use of evidence. Box 3.3 provides some examples of outcomes that fell into the category of knowledge use.

**Table 3.3: Use of evidence and data to inform planning, decision-making and/or actions at the institutional level**

Types	Examples of areas of change represented by the outcomes	Examples of how NEHSI contributed to the outcomes	All Knowledge outcomes	Of the knowledge outcomes, the number that built:		
				Capacity	Governance process	Habit
<b>Support for evidence generation</b>	State budget allocation for evidence generation; creation of a state-wide social audit program; development of state and inter-state level memos to promote NEHSI methodologies.	NEHSI's set of methodologies namely: Social Audit; CSS; SEPA and associated elements generated interest in evidence-based planning and convinced the two states to take action. NEHSI offered technical assistance for the social audit to be implemented state-wide.	9	1	8	1
<b>Data collection, management and analysis</b>	Creation of a research ethics unit, and data banks; improved registration, monitoring and documentation; expansion of HDSS and improved surveillance; performing statistical analyses for the social audit; training in survey analysis.	MSS, CSS and HDSS: demonstration and presentation of methodologies; identification of gaps in process and capacity, and sensitization of actors to the need to improve; piloting of software and methods of data collection; mentoring and provision of expertise, training.	16	11	9	3
<b>Use of evidence</b>	Development of budgets and strategic plans; allocation of resources and services; state planning; declaration of a polio immunization emergency; advocacy to build awareness.	NEHSI provided technical assistance in creation of docudramas, development of scorecard and presentations to state level; CIET and IDRC met with donors; results of MSS social audits.	24	8	16	3
<b>Sharing of evidence</b>	Sharing of social audit scorecards with other donors; uploading data from scorecards onto website; sharing data between institutions; radio broadcasts; jingles on key maternal and child health practices; docudramas.	Use of scorecard generated by NEHSI; formation of SEPA committees; NEHSI included the FMOH in the project since the beginning. CIET helped analyse and interpret the data and NEHSI familiarized different officials about the value of the social audit data.	5	1	3	1
<b>Total</b>			<b>54</b>	<b>21</b>	<b>36</b>	<b>8</b>

**Figure 3.3: Type of knowledge use by state at the institutional level**



(NB LGA outcomes are included but the two interstate and three federal outcomes are not included in this figure)

**Box 3.3: Example of knowledge outcomes at the institutional level**

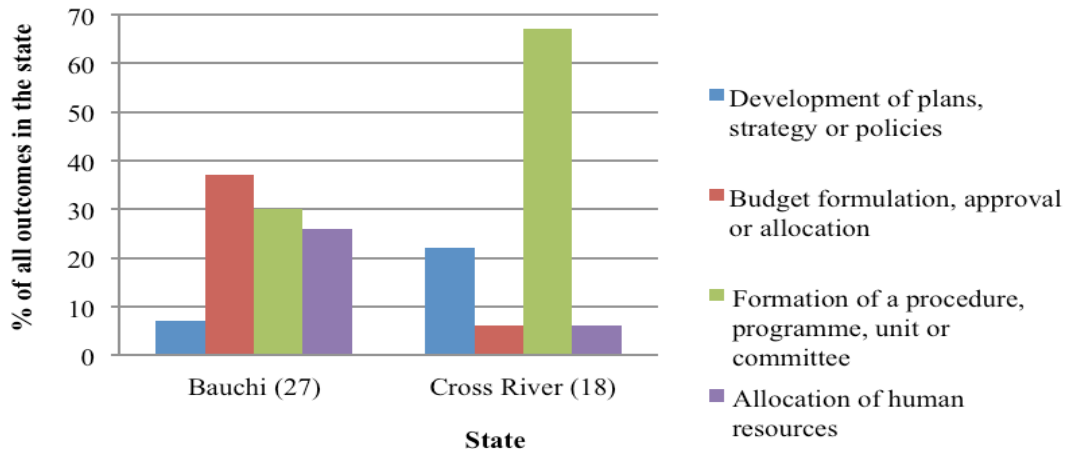
<b>Outcomes that demonstrated changes in knowledge</b>	
<i>(31) In January 2014, the Bauchi State Primary Health Care Development Agency used the data from the third social audit, which indicated low routine immunization coverage, to declare a polio immunization emergency in the State.</i>	<i>(48) In June 2012, the Governor of Cross River State expressed the need for the Open HDS/HDSS initiative to be scaled up to one site in each of the three senatorial districts of the State for the data to be statistically representative, and to use it to compare with data collected by other methods.</i>
<b>Outcomes that demonstrated changes in knowledge and capacity</b>	
<i>((15) In 2012, the Bauchi State Primary Health Care Development Agency established a Data Bank Unit.</i>	<i>(34) In March 2011, the University of Calabar of Cross River State set up a multi-disciplinary Scientific Board for the Cross River HDSS based in Akpabuyo LGA of Cross River State.</i>
<b>Outcomes that demonstrated changes in knowledge, capacity and habit</b>	
<i>(52) Since February 2013, the University of Calabar now uses mobile data collection for the Cross River HDSS and other projects. The mobile data collection for HDSS is based on the Open Data Kit, an easy to use and extensible mobile data collection tool.</i>	<i>(75) Since 2013, all the 20 LGAs (LGAs) in Bauchi now use scorecards to make their annual budget planning/request presented and defended before the Ministry for Local Government Affairs.</i>

### 3.2.4 Governance processes

We classified the outcomes that showed changes in governance processes into those associated with: 1) development of plans, strategy or policies; 2) budget formulation, approval or allocation; 3) formation of a procedure, programme, unit or committee; and 4) allocation of human resources. Figure 3.4 shows the breakdown of 45 outcomes by state (two additional outcomes were inter-state). Cross River's governance outcomes mainly focused on creation of procedures, programmes, units or committees (67%), and the development of plans strategies or policies (22%). The outcomes for Bauchi were more evenly spread across types except that less of them related to development of plans, strategies or policies (7%). In the category with the largest frequency (formation of a procedure, programme, unit or committee), eight out of 12 outcomes for Cross River and three out eight for Bauchi were associated with procedures.

Box 3.4 provides some examples of outcomes that fell into the category of habit change.

**Figure 3.4: Type of change in governance process by state at the institutional level**



(NB LGA outcomes are included but the two interstate and three federal outcomes are not included in this figure)

**Box 3.4: Example of outcomes that demonstrated changes in governance processes at the institutional level**

<b>Development of plans, strategy or policies</b>	
<i>(42) In 2011, the Bauchi government passed a law upgrading the existing School of Health Technology to a College of Health Technology, with which the Cross River government assisted Bauchi officials with documents and the experience of Cross River.</i>	<i>(318) In early 2014 the Cross River State Planning Commission and the Chairs of each LGA and PHC Coordinators planned a meeting to discuss the findings of the third social audit.</i>
<b>Budget formulation, approval or allocation</b>	
<i>(18) In June 2012, the Bauchi State Ministry of Budget and Economic Planning decided to provide early processing and swift approval of budgets that justified expenditures using social audit data.</i>	<i>(51) In 2013, the Cross River State Planning Commission got N 7.32 million Naira approved by the State Government to support Social Audit activities (April), and N 30.00 million counterpart funding approval to undertake MDGs Social Audit in the State (September).</i>
<b>Formation of a procedure, program, unit or committee</b>	
<i>(327) In February 2014, the Bauchi State Primary health care Development Agency has established CSS unit under the Directorate of Planning Research &amp; Statistics.</i>	<i>(32) In November 2010, the Cross River State House Committee on Health resolved to work with the State Executive Council to prevent out-of-pocket payments by pregnant women and children under-5 utilizing free state healthcare schemes.</i>
<b>Allocation of human resources</b>	
<i>(63) In June 2012, the Primary Health Care Development Agency restructured the whole supervisory structure to oversee immunization, bringing in people who are accountable to LGA officer.</i>	<i>(59) In August 2012, the Governor of Cross River appointed Dr. Bong Duke as Personal Assistant Strategic Planning and Technical Surveys and to be in-charge of the Sector-Wide Social Audit Programme in the State Planning Commission.</i>

### 3.3 Outcomes at the community level

<b>Box 3.5: Example outcomes at the community level</b>	
<b>Knowledge</b>	<b>Capacity</b>
<i>(40) In September 2011, community leaders and youth groups in Calabar South, Yala and Abi LGAs in Cross-River State began to request copies of docudramas during Socialising Evidence for Action Planning activities to share with other members of their respective communities because they found it informative.</i>	<i>(81) Since July 2012, the community of Eminekpon in Abi LGA, now identifies danger signs (severe headaches, waist pain, swollen legs), and sends women to health services when these occur.</i>
<b>Governance</b>	<b>Habit</b>
<i>(223) Since 2010 in a community in Toro LGA an action group was formed. One of the men in the group preaches in the mosque that women require assistance. This group also contributes money and has made fliers reflecting the issues in the docudramas. Now husbands are helping their wives.</i>	<i>(305) Since 2010 in a community in Yala LGA, the youth are involved in caring and helping pregnant women they fetch water and run errand for them.</i>

#### 3.3.1 Types of actors

The actors who initiated the 103 outcomes at the community level were generally described as: communities, the community, village, community or village leaders or chiefs, a “sarki”, an Imam; or women, men, husbands, wives and co-wives working together in some way.

#### 3.3.2 Types of outcomes

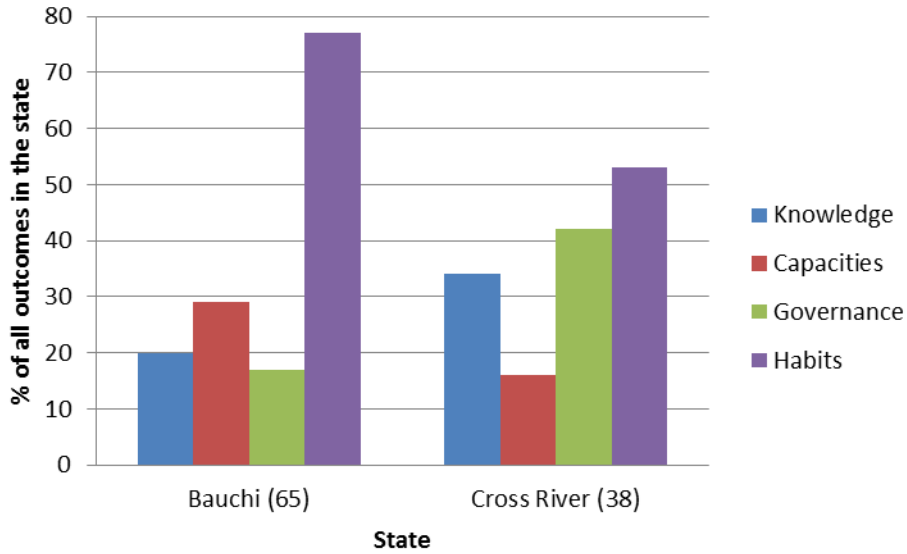
Figure 3.5 shows how the 103 outcomes harvested at the community level distributed across type of change and by state. For both states, changes in habit (77% and 53% for Bauchi and Cross River respectively) predominated but with clear evidence of changes in knowledge (20% and 34% respectively), capacity (29% and 16% respectively), and governance (17% and 42% respectively).

#### 3.3.3 Changes in habit

Almost seventy percent of the 103 community outcomes showed changes in habit. We decided therefore to explore these outcomes and their classifications into the other categories (Table 3.4)). Over half of them (56%) were not associated with any other type of change, 21% also showed a change in capacity, 14% showed a change in knowledge use, and 11% also showed a change in governance. Box 3.6 provides some examples of types of habit outcomes at the community level.



**Figure 3.5: Type of community change by state**



**Table 3.4: Frequency of types of community outcome by those classified as habit**

Habit	Habit alone	Knowledge Use	Capacity	Governance process	Other	Total
Outcomes that demonstrated change in habit	39	10	15	8	0	70 <sup>1</sup>
Outcomes that didn't demonstrate change in habit		16	10	19	2	33 <sup>1</sup>
<b>Total</b>	<b>39</b>	<b>26</b>	<b>25</b>	<b>27</b>	<b>2</b>	<b>103<sup>1</sup></b>

<sup>1</sup> Outcomes were classified into more than one category

<b>Box 3.6: Example of habit outcomes at the community level</b>	
<b>Outcomes that demonstrated changes in habit</b>	
<i>(189) Since 2010 in a community in Giade LGA, pregnant women do less physical work - grinding machines are now readily available. Their husbands now urge them to go for ANC.</i>	<i>(209) Since 2010 in a community in Giade LGA, now you can see a husband carrying his wife all the way from Garanya to Gulbun or Giade health facility for ante-natal check. People did not used to make the effort to bring their wives for antenatal care (Garanya, Giade).</i>
<b>Outcomes that demonstrated changes in habit and knowledge</b>	
<i>(221) Since 2010 in a community in Toro LGA women understand the importance of going to antenatal care during their pregnancies. They also recognize danger signs (bleeding, convulsions) and understand the risk factors (heavy work). They have now reduced their work during pregnancy and go for regular antenatal care visits.</i>	<i>(283) Since June 2010 in a community in Yala LGA, the community has formed a group of men and women to help any woman who is sick, weak or pregnant.</i>
<b>Outcomes that demonstrated changes in habit and capacity</b>	
<i>(212) Since 2011 in a community in Giade LGA, a group of men ensures that everyone in their community watches the docudrama, and call attention to husbands about beating their wives. This has reduced beating, criticizing and abusing in homes.</i>	<i>(242) Since 2010 in a community in Toro LGA women are able to discuss pregnancies with each other. This happens during naming ceremonies and also on a regular basis. Women are also able to discuss with their husbands.</i>

### 3.3.4 Significance of the community outcomes

Table 3.5 illustrates the significance of outcomes at the community level. Forty five percent demonstrated knowledge of risk factors and 25% use of the health system. Twenty seven percent were related to labour in pregnancy, 15% interpersonal violence, and 12% spousal relations. The distributions were similar in both states although there were more related to interpersonal violence in Cross River.

<b>Table 3.5: Significance of the community outcomes</b>			
	<b>Bauchi</b>	<b>Cross River</b>	<b>Total</b>
<b>Spousal relations</b>	10 (15%)	2 (5%)	<b>12 (12%)</b>
<b>Interpersonal violence</b>	7 (11%)	8 (21%)	<b>15 (15%)</b>
<b>Physical labour in pregnancy</b>	18 (28%)	10 (26%)	<b>28 (27%)</b>
<b>Knowledge of risk factors</b>	30 (46%)	16 (42%)	<b>46 (45%)</b>
<b>Use of health system</b>	16 (25%)	10 (26%)	<b>26 (25%)</b>
<b>Total number</b>	<b>65</b>	<b>38</b>	<b>103</b>

### 3.4 Outcomes at the individual level

<b>Box 3.7: Example outcomes at the individual level</b>	
<b>Knowledge</b>	<b>Capacity</b>
<i>(181) In 2011, a man in a community in Darazo LGA learns about danger signs during pregnancy and is able to identify them when displayed in his pregnant wife. Having learned about risk factors, he asks her to reduce her heavy work, and ensured that other family members help her.</i>	<i>(198) Since 2010 in a community in Giade LGA a man takes his wife for ANC and also makes arrangements for her not to have to do any physical labour during her pregnancy.</i>
<b>Governance</b>	<b>Habit</b>
<i>(253) Since 2010 a chief in a community in Toro LGA has been more implicated in solving domestic violence in the community and has also made changes in his own household around heavy work.</i>	<i>(80) Since 2010 in a community in Abi LGA, after Socialising Evidence for Action Planning (SEPA) a pregnant woman stops fetching water because her husband and children encourage her to do less physical work and pitch in.</i>

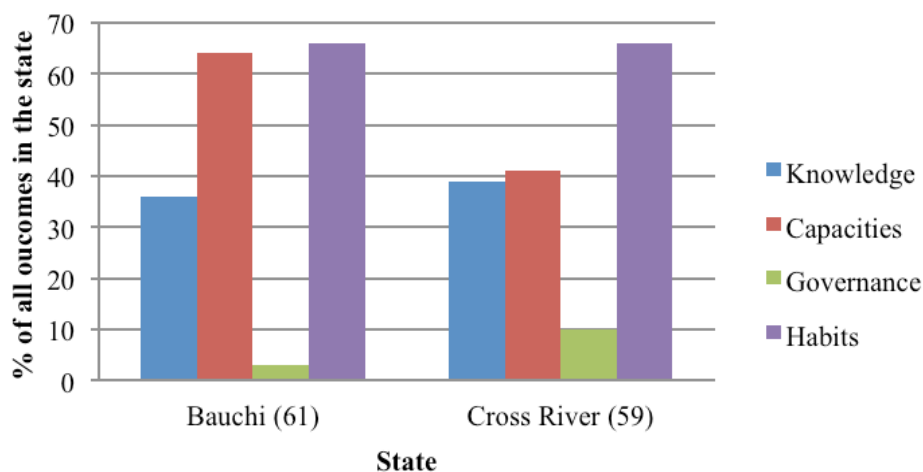
#### 3.4.1 Types of actors

The actors who initiated the 120 outcomes at the community level were generally described as: a woman, man, wife, husband, mother, father, neighbour, health care worker, traditional birth attendant, traditional doctor, or a chief.

#### 3.4.2 Types of outcomes

Of the 120 outcomes harvested at the individual level, 66% demonstrated a change in habit, 53% a change in capacity, 38% a change in knowledge, and 7% a change in governance. Figure 3.6 shows that the types of outcomes distributed quite similarly across each of the two states.

**Figure 3.6: Type of individual change by state**



### 3.4.3 Changes in habit

Sixty six percent of the 120 individual outcomes showed changes in habit. We decided therefore to explore these 79 outcomes and their classifications into the other categories (Table 3.6)). Thirty four percent of them were not associated with any other type of change, 16% also showed a change in knowledge use, 51% also showed a change in capacity, and 1% also showed a change in governance. Box 3.8 provides some examples of types of habit outcomes at the community level.

**Table 3.6: Frequency of types of community outcome by those classified as habit**

Habit	Habit alone	Knowledge Use	Capacity	Governance process	Other	Total
Outcomes that demonstrated change in habit	27	13	40	1	0	79 <sup>1</sup>
Outcomes that didn't demonstrate change in habit		32	23	7	0	41 <sup>1</sup>
<b>Total</b>	<b>27</b>	<b>45</b>	<b>63</b>	<b>8</b>	<b>0</b>	<b>120<sup>1</sup></b>

<sup>1</sup> Outcomes were classified into more than one category

### Box 3.8: Example of habit outcomes at the individual level

Outcomes that demonstrated changes in habit	
<i>(226) Since 2012 a man in a community in Toro LGA has started to encourage his wife to attend ANC checkups, which she now does.</i>	<i>(292) Since 2010 in a community in Yala LGA, after Socialising Evidence for Action Planning the woman reduces her work at the farm during pregnancy and the husband stops quarrelling with her. Husband took up much of the hard work and has continued to do so for years after her giving birth.</i>
Outcomes that demonstrated changes in habit and knowledge	
<i>(173) Since 2010, a woman in a community in Darazo LGA learns the benefits of reducing heavy work and follows this advice in subsequent pregnancies. She also was able to identify danger signs (bleeding and swelling) and sought help in a clinic when these occurred.</i>	<i>(200) Since 2010 in a community in Giade LGA, a woman has joined other women in reaching out to pregnant women to tell them about the dangers of physical labour (Chiomari, Giade).</i>
Outcomes that demonstrated changes in habit and capacity	
<i>(197) Since 2010 in a community in Giade LGA, a woman follows advice to reduce her heavy work during her pregnancy.</i>	<i>(276) Since November 2010 in a community in Yala LGA, in a woman who suffered from intimate partner violence (IPV) and miscarriage, has made efforts with her husband to stop quarrelling.</i>

#### 3.4.4 Significance of the individual outcomes

Of the 120 outcomes harvested at the individual level, 23% demonstrated a change in spousal relations, 14% a change in interpersonal violence, 32% a change in physical labour during pregnancy, 37% a change in knowledge of risk factors, and 25% a change in use of the health system. Table 3.7 shows how these outcomes distributed across each of the two states. More outcomes were associated with spousal relations and inter-personal violence in Cross River and less with use of the health system.

	<b>Bauchi</b>	<b>Cross River</b>	<b>Total</b>
<b>Spousal relations</b>	11 (18%)	17 (29%)	<b>28 (23%)</b>
<b>Interpersonal violence</b>	3 (5%)	14 (24%)	<b>17 (14%)</b>
<b>Physical labour in pregnancy</b>	21 (34%)	17 (29%)	<b>38 (32%)</b>
<b>Knowledge of risk factors</b>	25 (41%)	20 (34%)	<b>45 (37%)</b>
<b>Use of health system</b>	21 (34%)	9 (15%)	<b>30 (25%)</b>
<b>Total number</b>	<b>61</b>	<b>59</b>	<b>120</b>

### 3.5 Outcomes that imply sustainability

We classified “sustainability” outcomes (see Section 2.5) as those which: 1) either supported or strengthened and thus contributed to sustaining one or more other outcomes; and 2) incorporated or contained in a tangible manner one or more of the three principles we identified as necessary for enduring changes in evidence-based planning and decision-making in the Nigerian PHC system. We found no sustainability outcomes among the local government, community and individual outcomes, but there were 32 among the 55 state level outcomes (Table 3.8).

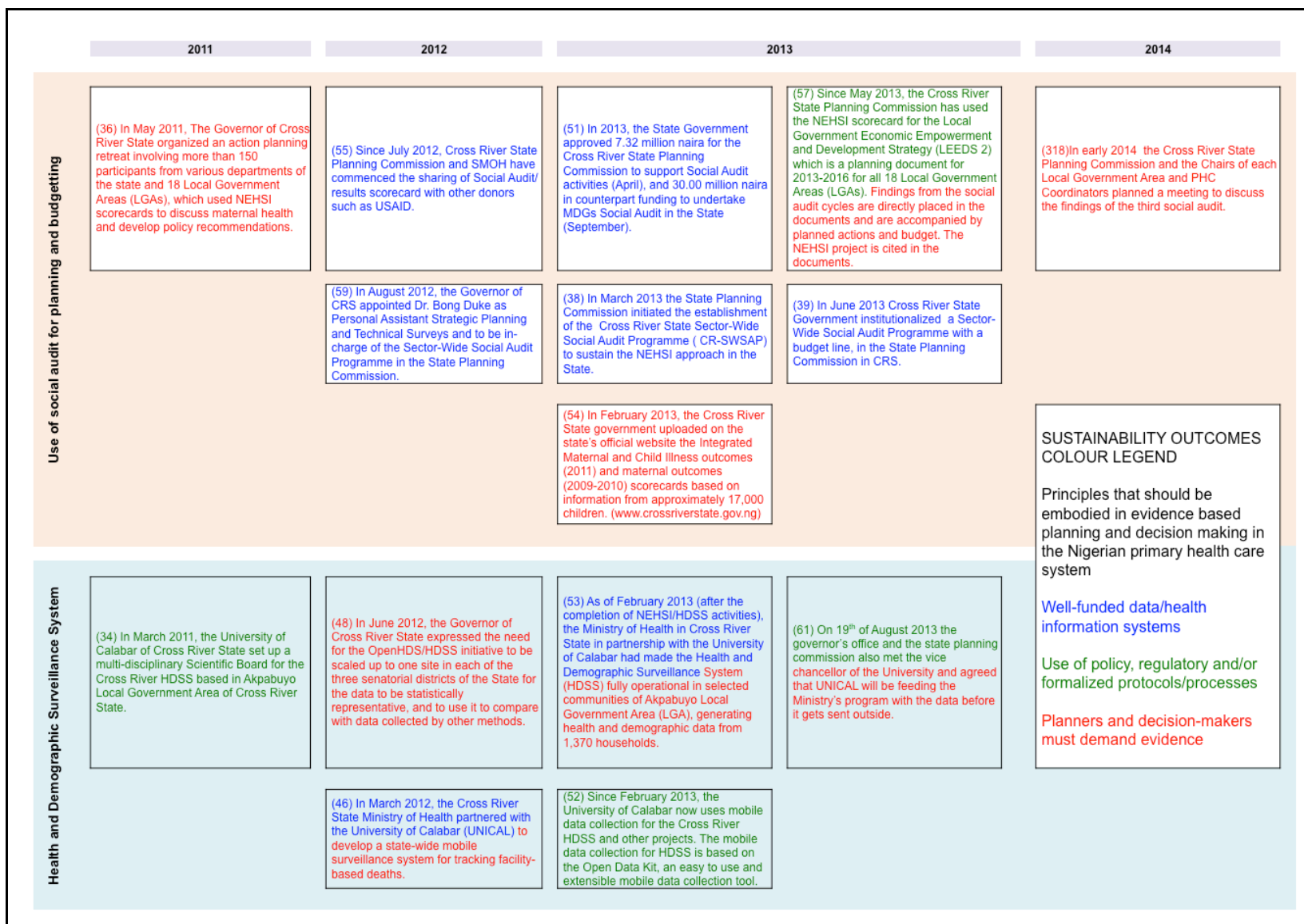
In Bauchi and Cross River states, over half of the 55 outcomes harvested at the state level were classified as sustainability outcomes. These are mapped by time for Bauchi in Figure 3.7 and for Cross River in Figure 3.8 We identified two clusters of outcomes in each state. In both states NEHSI achieved outcomes related to the use of social audit for planning and budgeting. In addition, in Bauchi there is a cluster of outcomes related to the development of institutional capacity and in Cross River to the HDSS.

	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>Total</b>
<b>Bauchi</b>	2	2	4	4	5	<b>17</b>
<b>Cross River</b>	0	2	4	8	1	<b>15</b>

**Figure 3.7: Bauchi sustainability outcomes, 2010-2014**

	2010	2011	2012	2013	2014	
Use of social audit for planning and budgeting	(58) In July–August 2010, the MOH in Bauchi State used evidence from the first <b>social audit</b> cycle for development of the state strategic development plan.	(10) In March 2011, the Bauchi State <b>Ministry of Health</b> prioritized integrated management of childhood diseases (IMCI) as the topic for the second <b>social audit</b> cycle. The SMOH based its decision on the gains from the use of evidence from the <b>Multi-stakeholder Information and Planning System (MSS)</b> program in the previous cycle.	(20) In June 2012, the Bauchi State <b>Ministry of Health</b> and the State Primary Health Care Development Agency ( <b>SPHCDA</b> ) expressed their commitment to share the cost of <b>data collection</b> during the next <b>social audit</b> cycle which falls beyond the life of the NEHSI project.	(23) In September 2012, Bauchi State implemented an evidence-based approach to formulating its <b>budget</b> and planning activities for the year 2013 using <b>social audit</b> evidence to justify activities and allocations. Unlike previous years, relevant <b>budget</b> lines were supported by evidence from 1 <sup>st</sup> or 2 <sup>nd</sup> cycle of the social audit.	(19) In 2013, the Bauchi State <b>Ministry of Budget</b> and Economic Planning based many activities and allocations in the Primary Health Care Development Agency ( <b>PHCDA</b> ) <b>budget</b> on evidence from the two <b>Multi-stakeholder Information and Planning System's (MSS)</b> cycles, including financial allocation for the third <b>social audit</b> .	(310) In January 2014, officials of the Bauchi state SMOH, SPHCDA, BACATMA and HMB, ran the statistical analysis for the data from the third social audit.
	<p><b>SUSTAINABILITY OUTCOMES COLOUR LEGEND</b></p> <p>Principles that should be embodied in evidence based planning and decision making in the Nigerian primary health care system</p> <p>Well-funded data/health information systems</p> <p>Use of policy, regulatory and/or formalized protocols/processes</p> <p>Planners and decision-makers must demand evidence</p> <p>N.B. Outcomes that do not reinforce one or more outcomes not classified</p>	(22) In July 2012, the Bauchi Primary Health Care Development Agency (PHCDA) earmarked N17 million to support an annual benchmark survey to generate information on key <b>indicators</b> to assess movement toward improved health care and adopt <b>social audit</b> methods and tools (scorecards in particular) for the three social audit cycles.	(26) Between July – December 2012, the Bauchi State <b>Ministry of Health</b> (SMoH) started providing high quality <b>data</b> for use in the state's submission of their <b>budget</b> and the NHSDP planning and evaluation framework.	(56) In July 2013, TSHIP (the Targeted States High Impact Project) made a commitment to fund part of the third social audit in Bauchi state.	(311) In January 2014, the Bauchi state Primary Health Care Development Agency used the data from the third social audit, which indicated low routine immunisation coverage, to declare a polio immunisation emergency in the State.	(314) In January 2014, the Bauchi State Ministry of Health commits to reviewing the implementation of its free treatment policy and improve the governance and systems checks of the policy as well as to bring in the community for local accountability.
Development of Institutional Capacity	(325) Since 2010, the Bauchi state <b>SPHCDA</b> has improved the quality of <b>monitoring and documentation</b> of the MNCH week, a major national strategy response to maternal and child health during which observance and quality are major issues for effectiveness	(13) In May 2011, the Bauchi State <b>Ministry of Health</b> ( <b>SMoH</b> ) established a functional <b>Data Bank</b> to coordinate <b>data collection</b> activities as part of an initiative to revitalize its Directorate for Research, Planning and Statistics (DPRS).	(15) In 2012, the Bauchi State Primary Health Care Development Agency (PHCDA) established a Data Bank Unit.	(21) In September 2013 the Bauchi State Ministry of Health allocated about N7 million towards for data collection during the next social audit cycle which falls beyond the life of the NEHSI project.	(319) In 2013/2014 Bauchi State, members of the SMOH, SPC, CHD, CR-SWSAP ran the statistical analysis to create the scorecards themselves	(327) In February 2014, the Bauchi state SPHCDA has established <b>CSS unit</b> under the Directorate of Planning Research & Statistics.

**Figure 3.8: Cross River sustainability outcomes, 2010-2014**





## 4. The evaluation questions

### 4.1 Introduction

From 2010 through February of 2014, NEHSI influenced 294 outcomes on all levels right across the range of changes it aimed to achieve (Figure 3.1). These outcomes were associated with NEHSI's activities to meet its theory of change, that is: to implement a set of interventions to address substantial challenges in the generation and use of evidence for planning and decision-making, caused by gaps, weaknesses, limited capacities, practices and responsiveness of the existing health information system to provide data for planning and decision-making (Box 1.1).

The preceding analyses presented the outcomes harvested from documents, during consultations or as part of the MSC stories. We recognize that these are unlikely to be all NEHSI's outcomes, and that the numbers are only indicative of what was achieved. It is important to bear in mind that each outcome is not of equal weight and so differences in numbers between categories and between states are interesting but not necessarily important. We cannot judge the relative values of the different outcomes but we can make observations that can form the basis of further discussion by the Evaluation Sub-Committee.

### 4.2 Extent and how NEHSI influenced evidence-based planning and decision-making

*To what extent and how has NEHSI influenced the evidence-based planning and decision-making (through changes in capacities, habit, knowledge use and governance processes) in the PHC system in particular and in the health system in general at the individual, community, and institutional level (federal, Bauchi State, Cross River State, and LGAs)?*

#### 4.2.1 The extent to which NEHSI influenced evidence-based planning and decision-making

The actors responsible for the outcomes at the institutional level were few: state level agencies (health, budget, and planning), LGAs, the Federal Department of Planning Research and Statistics, and the National Council for Health. At the community and individual levels a range of people were responsible for outcomes including chiefs, community leaders, health workers, women, men, wives and husbands.

1) Three quarters of the 71 outcomes at the institutional level demonstrated *use of evidence and data to inform planning, decision-making and/or actions (knowledge)*. Both states, similarly, demonstrated a progression in the proportion of knowledge outcomes from support for evidence generation, to data collection and analysis, to use and sharing of evidence:

- There was clear institutional support for evidence generation in the form of budget allocation, or through state commitment in strategy, and institutional/structural responses or programme development, for example:

*(20) In June 2012, the Bauchi State Ministry of Health and the State Primary Health Care Development Agency expressed their commitment to share the cost of data collection during the next social audit cycle which falls beyond the life of the NEHSI project.*

(38) In March 2013 the State Planning Commission initiated the establishment of the Cross River State Sector-Wide Social Audit Programme (CR-SWSAP) to sustain the NEHSI approach in the State.

- Almost a third of the knowledge outcomes involved data collection, management and analysis with over half of these outcomes resulting in built capacities, supported by governance processes.

(13) In May 2011, the Bauchi State Ministry of Health established a functional Data Bank to coordinate data collection activities as part of an initiative to revitalize its Directorate for Research, Planning and Statistics.

(46) In March 2012, the Cross River State Ministry of Health partnered with the University of Calabar to develop a state-wide mobile surveillance system for tracking facility-based deaths.

- Over half the knowledge outcomes involved use and sharing of evidence for decision-making with two thirds of these outcomes supported by changes in governance processes and a half resulting in built capacity.

(58) In July–August 2010, the Ministry of Health in Bauchi State used evidence from the first social audit cycle for development of the state strategic development plan.

(57) Since May 2013, the Cross River State Planning Commission has used the NEHSI scorecard for the Local Government Economic Empowerment and Development Strategy which is a planning document for 2013-2016 for all 18 LGAs. Findings from the social audit cycles are directly placed in the documents and are accompanied by planned actions and budget. The NEHSI project is cited in the documents.

- That half of the knowledge outcomes already involved use or sharing of the evidence during the time of the project is promising given that a third of the knowledge outcomes was associated with capacity building for data collection and analysis, and the remainder was associated with support for evidence generation. This implies that with continued support and as institutional capacity builds, use of evidence could increase with time.

- 2) Changes in capacity and habit were almost entirely associated with changes in knowledge. Capacity and habit seem to have been built in the areas of data collection, management and analysis and in the use of evidence.

(26) Between July – December 2012, the Bauchi State Ministry of Health (SMoH) started providing high quality data for use in the state's submission of their budget and the NHSDP planning and evaluation framework.

(34) In March 2011, the University of Calabar of Cross River State set up a multi-disciplinary Scientific Board for the Cross River HDSS based in Akpabuyo Local Government Area of Cross River State.

- 3) Almost seventy percent of the 71 institutional outcomes was associated with changes in governance processes. Changes in a state agency or in the exercise of power are almost as difficult to achieve as changes in habit among state agents, be they individual or organizational. Yet, there were almost as many outcomes that demonstrated a change in governance as those that represented a change in knowledge, the relatively easier outcome to achieve.

- These changes were different across the two states but involved the development of plans, strategy and policies; budget formulation, approval and allocation; formulation of procedures, programmes, units or committees; and the allocation of human resources. These findings demonstrate considerable institutional support, mostly at the state level but also from the local governments and in one case at the federal level:

(321) In January 2014, the Deputy Director of the Federal Department of Planning Research and Statistics in the Ministry of Health integrated elements from the social audit into the draft version of the National Health Information System policy under review, such as socialising the data from the HIS and going beyond facility-based data.

- In a process of influencing planning and decision-making in state institutions, changes in knowledge will usually precede changes in capacity. Thus, it is logical that there were almost three times more outcomes that represented *use of evidence and data to inform planning, decision-making and/or actions (knowledge)* than outcomes that demonstrated *an ability to undertake a new function or to function differently (capacity)*. Similarly, it is not surprising that there were double the number of one-time changes in capacity compared to changes in *habit, that is, outcomes that demonstrate repeated change in behaviour or practice*, given that it takes time for capacity to be translated into habit.

4) The pattern of outcomes at *the community and individual levels* is distinctly different from that at the institutional level – with a reversal of proportions between knowledge (32% compared to institutional at 76%) and habit (67% compared to institutional at 12%). This is perhaps not surprising given that the outcomes were harvested mostly through informants telling in 2012 their most significant stories since 2010 - generally one per informant. Naturally, the informant will pick the most important and since in general since knowledge use and applying new capacities precede the development of habit, there tend to be more of the latter than the former.

- The focus of the community and individual outcomes related to spousal relations, interpersonal violence and labour in pregnancy is relevant for planning and decision-making in providing information for education and communication materials development for PHC system response. However, a high focus on use of the health system, and knowledge of risk factors implies changing understanding and use of the health system:
- Twenty five percent of the community and also of the individual outcomes involved use of the health system, for example:

(4) Starting in May 2012, 300-400 communities in Giade LGA established a clinic referral system that consists of transport (such as Kekenshanu and donkeys) arrangement and its financial support, to address danger signs.

(85) Since 2011 in a community in Abi LGA, a neighbour registers at a health clinic for the first time during a pregnancy, after Socialising Evidence for Action Planning (SEPA) and says more women in the community in general register at the health facility, this is new.

- Forty five percent of the community outcomes and 37% percent of the individual outcomes involved knowledge of risk factors, for example:

(257) Since 2011 a man in a community in Darazo LGA who formerly didn't permit his wives to do for ANC visits during their pregnancies has begun to show the NEHSI docudrama to members of his community, emphasising the importance of ANC, and spreading knowledge about danger signs and risk factors.

(277) Since 2010 in a community in Yala LGA, men now know that a pregnant woman does not need do heavy work and so husbands assist the woman in her farm work and if he does not, the men in my community will call him to order or report him to the king.

#### 4.2.2 NEHSI's contribution to the outcomes

The 294 outcomes were contributed to by three of NEHSI's components described in Section 1.2.3: the MSS, the HDSS, and the CSS. No outcomes arose from the Sustainable Human Capital (SHC) component which was operational in each state and one from the Linkages, Opportunities and Sustainability (LOS) component which was operational at the federal level.

- **The Multi Stakeholder Information and Planning System (MSS):** CIET promoted this community-based information system to generate data through household surveys, linking this data to health facilities located within the communities, and analysing the information from the perspective of different stakeholders, and integrating it into existing health and information systems for actionable change to policy and practice. The MSS consisted of two phases: the *Social audit* — a data generation phase, which follows a government-identified priority, consultation, development of data collection instruments, household surveys, facility and community profiles, focus-group discussions; and through *SEPA* — which consisted of feeding the evidence into the various sub-systems within state-level governmental structures that can build pressure for change. Throughout the life of NEHSI three complete cycles of social audit/SEPA were achieved. Each cycle built on the evidence and resultant changes from the previous cycle. MSS contributed to outcomes by, for example:

*(10) The NEHSI supported MSS strengthened the collection of data on maternal outcomes in the first data collection cycle in first quarter 2009. MSS developed a score card which provided relevant information on the health situation in the state to the State Ministry of Health.*

*(18) NEHSI developed and promoted the use of the social audit approach and score card which has now been adopted by the Bauchi state.*

*(19) As part of Socialising Evidence for Action Planning, NEHSI included the Ministry of Budget and Economic Planning into the discussions around evidence, sharing the scorecards. It held formal and informal meetings involving the Directors budget and planning and their staff members into this discussion and also developed an understanding in terms of what could be their role in evaluating budget proposals for justifications based on evidence.*

*(25) NEHSI's advocacy of the process of Socialising Evidence for Action Planning led to this increased allocation by the local government for related home visits, which are integral to the process.*

- **The Health and Demographic Surveillance System (HDSS):** NEHSI through the universities of Calabar and of Southern Maine set up a demographic surveillance site in Cross River. NEHSI trained enumerators to conduct household visits regularly to collect demographic information in order to measure burden of disease trends over time. HDSS contributed to outcomes by, for example:

*(34) NEHSI supported the development of the Open HDS software (developed by the University of Southern Maine) and piloted by the multi-disciplinary team at the University of Calabar, using the HDSS in Akpabuyo LGA. This heralded the development and application of e-health technology for data gathering and analysis.*

*(48) NEHSI supported the pilot of the HDSS system in Akpabuyo LGA (LGA) of Cross River State and the sub component involving the development of the Open HDS software (by the University of Maine) with interoperability with the National HMIS.*

*(52) NEHSI has supported the development of mobile data collection for HDSS through the active collaboration between the University of Maine and the University of Calabar.*

- **The Community Surveillance System (CSS):** This surveillance system arose in request by the Bauchi State government and focuses on maternal health. Working within the existing NHMIS, household monitoring visits have been structured to identify, in a real-time manner, households at risk of suffering maternal ill-health. Critically, the CSS links the NHMIS to health facilities for clinical action, something that currently does not happen. The NEHSI CSS trained data collectors and used mobile phones as a way of addressing these problems. The CSS built on the findings of the first MSS cycle and was implemented by CIET in one LGA (Giade – based on government inputs). CSS contributed to outcomes by, for example:

*(64) NEHSI is instrumental to the development/protocol for the CSS system, wherein Junior Community Health Extension Workers make home visits for 100% coverage of the LGA.*

*(67) As part of the CSS, NEHSI was able to get more female CSS workers to Giade. Through discussions with CIET and Mr Othman, the PHC team, the district head the communities made arrangements for health workers accommodation.*

- Both MSS and CSS contributed to community and individual outcomes. Beginning in 2010 in the LGAs of Abi, Calabar South, Yala in Cross River State and of Giade, Toro and Darazo in Bauchi state, NEHSI started working with the communities on the care of pregnant women and their unborn children through the MSS programme. In this programme, CIET formed community groups of men and women (separately) and showed them a docudrama with findings from the first social audit on the care of pregnant women. After the second social audit, new docudramas were made to share findings about child care. Each docudrama was followed by facilitated discussions, which were oriented towards identifying actions that the group of viewers could take. In Giade, NEHSI also enrolled pregnant women and their husbands in a series of home visits to monitor the health of both mother and child, which was part of the CSS that was implemented after the first social audit.

#### **4.2.3 What does this mean for the Nigerian health system?**

In Nigeria, the availability of health data is seen largely as a public good, the responsibility of government and paramount to informed public health action.<sup>14</sup> Yet decisions are not often evidence-based – due, for example, to lack of available data, weak capacity of information system operators and a general lack of habit and practices of applying data for decision-making.<sup>14, 15,16,17, 18</sup>

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<sup>14</sup> Federal Ministry of Health: National Health Management Information System Policy & Strategic Plan of Action. 1997.

<sup>15</sup> Federal Ministry of Health, Nigeria: National Strategic Health Development Plan (2010-2015),

<sup>16</sup> Federal Ministry of Health, National Council on Health (NCH) Memo NCH/52/013D, Memorandum of the Honorable Commissioner of Health Oyo State on experience on the integration of Health Management Information System, April 2009

<sup>17</sup> Federal Ministry of Health, National Council on Health (NCH) Memo of the Honorable Commissioner of Health, Imo State on the problem of Non-availability of Health Data and Statistics for informed decisions, planning and monitoring progress of health reforms and MDGs

NEHSI has addressed gaps in data availability through its state-wide MSS-social audit, the allocation of funds, and the creation of new programmes and units to ensure evidence generation and use. The governments of Bauchi and Cross River states are now connecting budgets to evidence to improve the performance of their respective health systems and they are demonstrating greater willingness to invest in health information systems.

The NHSDP calls for the attainment of an effective inclusive (gender) community participation and ownership of sustainable health outcomes, and to strengthen the interface between communities, individuals and health facilities and services. A number of NEHSI outcomes show evidence, from the social audit and through the innovative use of CSS workers, of increased knowledge of danger signs and risk-factors during pregnancy and child birth - the underlying causes of poor maternal health and child health outcomes.

Collecting and using information at the community level has been the most challenging link in the Nigerian national health information system. The PHC system provides for the integration of community-level systems, such as the establishment of Ward/Village Development Committees, but the information systems required to energize these committees have remained very poorly developed despite many initiatives that have attempted to address this problem<sup>14</sup>. That the state government has committed resources to entrench the NEHSI approach suggests that NEHSI has provided a workable and adaptable solution. Through SEPA, communities are empowered with evidence and voice to demand change and take actions also by themselves.

At the beginning of 2014, NEHSI influenced two federal agencies to integrate elements from the social audit into the draft version of the National Health Information System policy. This outcome is a clear indication of positive federal level policy response to strengthen the NHMIS. It also demonstrates NEHSI's contribution to national policy changes which in turn promises to sustain the NEHSI approach.

### **4.3 To what extent do the outcomes imply sustainability?**

*Sustainability: to what extent do the NEHSI outcomes achieved to date: a) reinforce each other, and b) embody the principles of evidence-based planning and decision-making in the Nigerian PHC system?*

Equally important as the contribution of NEHSI's 294 outcomes to evidence-based planning and decision-making, a significant number of those outcomes have contributed to the sustainability of those changes.

- 1) NEHSI has not (yet) contributed sustainability outcomes at the federal level and only two outcomes represented inter-state collaboration. Coincidentally, the latter are the first and second outcomes harvested:

*(1) In March 2010 the State Ministries of Health (SMOHs) for Bauchi and Cross River states presented an inter-state memorandum at the National Council of Health expressing a commitment to evidence-based planning and advocated for Federal Government leadership in promoting the "social audit" approach as a possible national strategy for implementation of the National Strategic Health Development Plan (NSHDP).*

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<sup>18</sup> Commonwealth: Health Matters: Newsletter of The Commonwealth Secretariat Health Programme: M. Lecky; Nigeria Health Information System; November 2001, Vol 2-5.

(2) In 2010, 2012, and 2013, the Governments of Bauchi State and Cross River State have presented joint-memo to the National Council on Health - NCH (which is the highest advisory body on health policies in Nigeria) on NEHSI methodologies, which have been approved by NCH for adoption by other states.

Both outcomes incorporate one of the three sustainability principles: *Use of policy, regulatory and/or formalized protocols/processes*. Outcome 2 also embodies a second principle: *Planners and decision-makers must demand evidence*.

- 2) If NEHSI's achievements at the inter-state and federal level have yet to materialise, it is at the state level where NEHSI has made significant inroads towards enduring change. About fifty percent of the outcomes in each state were classified as sustainability outcomes and related to: the social audit for planning and budgeting in both states; institutional capacity building in Bauchi; and the development of the HDSS in Cross River.
- 3) The social audits as promoted by NEHSI provide information to unlock root causes of health conditions directly from ordinary households. By socialising the evidence among communities, individuals, service workers and planners, pressure is generated to improve, as in the case of NEHSI, the health of mothers and their children. The multiple MSC outcomes in both states demonstrate the fruits of this process. There are also clear signs that the approach is becoming sustainable in both states:

In Bauchi State, 14 of 17 sustainability outcomes related to use of a social audit for planning and budgeting:

- Between July 2010 and January 2014, the SMOH used three consecutive social audits for both planning and decision-making. The first social audit informed the state strategic development plan (58) and prioritized integrated management of childhood diseases (IMCI) as the topic for the second social audit (10). In the second half of 2012, the Ministry started providing high quality data from the audit for use in the state's budget submission to justify activities and allocations, a practice that continues (19, 23, 26). Most recently, in January 2014, the PHCDA used the data from the third social audit, which indicated low routine immunisation coverage, to declare a polio immunisation emergency in the state (311).
- Equally important is the Bauchi government's financial commitments to support evidence-based decision-making (20, 22, 56). Concretely, in July 2012, the Bauchi PHCDA earmarked N17 million to support an annual benchmark survey to generate information on key indicators to assess movement toward improved health care and adopt social audit methods and tools (scorecards in particular) for the three social audit cycles; and in September 2013, the SMOH allocated N7 million to support data collection for the next social audit cycle that would occur after NEHSI's completion (21). In 2014, the PHCDA began to advocate that donors allocate more funds to routine immunisation (312).

In Cross River State, nine of 15 sustainability outcomes related to use of a social audit for planning and budgeting:

- Cross River State adopted the social audit a year later than Bauchi but has since used the approach consistently for planning (36, 57, 318) and for decision making (55, 38). As early as 2011, the State Governor organized a retreat with 150 representatives from the state and 18 LGAs to develop policy recommendations based on the maternal health score cards (36). Since

May 2013, the Planning Commission has integrated social audit findings into its strategic planning (57). Since 2012, the Planning Commission has been sharing social audit results with donors such as USAID.

- Significantly in June 2013, the state government institutionalized a Sector-Wide Social Audit Programme (CR-SWSAP), with a budget line, in the State Planning Commission (39). The same year the Planning Commission approved N7.3 million to support the social audit and funding approval to undertake a Millennium Development Goal (MDG) audit (51). These are major indications of the sustainability of the social audit approach in Cross River.

4) In Bauchi State, three of 17 sustainability outcomes related to institutional capacity development:

- In May 2011, the SMOH strengthened its data bank (13) and the PHCDA established a data bank (15). In February 2014, the PHCDA had established CSS unit (327).
- These initiatives are undertaking statistical analyses and producing tangible scorecards and reports. These are three concrete responses to policy-makers' demand and reliance on evidence generation and use and are prerequisite for strengthening the health information system in Bauchi State. They directly address some of the weaknesses in the current HIS operations in the state.

5) In Cross River, six of 15 sustainability outcomes related to Health and Demographic Surveillance system:

- One stream of sustainable changes involved the state government's partnership with University of Calabar (UNICAL) from March 2012. In the first year, NEHSI developed a state-wide mobile surveillance system for tracking facility-based deaths (46) and in the following year, UNICAL began using mobile data collection for the Cross River HDSS, as well as for other projects (52). The software developed ensures that data from the HDSS can be transferred to the NHMIS, which operates at the State level. In 2013, UNICAL agreed to feed the Ministry's programme with the data before it gets sent outside (61).
- Two of the HDSS outcomes in Cross River embody the principle that sustainability requires *well-funded data/health information systems* (46, 53). Significantly, in February 2013, after the completion of NEHSI's HDSS activities, the SMOH worked with UNICAL to operationalize HDSS in selected communities.
- The outcomes demonstrate that in Cross River State, there is demand for evidence, expansion of the HDSS protocols to other sites and implied funding and reliance on sharing of data with the State. The interface between the State Government and the HDSS augurs well for the sustainability of HDSS in Cross River State.



## 5. Conclusions

Based on its pre-inception consultations, and in line with its theory of change, NEHSI set out to address substantial challenges in generating and using evidence for planning, decision-making and action. In the preceding analysis and interpretation of the outcomes we have shown the extent to which, and how, NEHSI, with almost 300 outcomes, has influenced changes in knowledge use, habit, habit and governance processes, at the institutional, community and individual levels in Bauchi and Cross River states. We have also shown how NEHSI has contributed to sustainability wherein some of the outcomes reinforce each other and embody the principles of evidence-based planning and decision-making in the Nigerian PHC system. But in what ways do these achievements build and strengthen the health information system in Nigeria?

The Health Metrics Network (HMN) provides a framework<sup>19</sup> for evaluation of national health information systems. The framework includes six components under the headings of inputs (resources), processes (indicators, data sources, and data management) and outputs (information products and use). We recognize that NEHSI's contribution was not in building a specific information system but in supporting and researching approaches to address gaps in state level systems. NEHSI aimed to complement other activities, and did not seek to address all components of the framework equally, but it is useful to benchmark its outcomes against a globally-adopted framework.

### Inputs to the system:

*Health information system resources: There are several physical and structural requirements that need to be put in place before a strong system can be built. Some of the outcomes addressed these resource requirements through, for example: the training of Junior Community Health Extension Workers (JCHEWs) to identify households at risk of adverse maternal health outcomes and collect data that is fed into the NHMIS; and the establishment of units with essential expertise, for example databanks, a health research ethics committee, and a sector-wide social audit unit.*

Nonetheless, the NEHSI outcomes did not address the NHMIS Minimum Package of support required to enable minimum infrastructural development,<sup>20</sup> Nor did NEHSI's outcomes represent changes in legislative, regulatory or planning frameworks in either Bauchi or Cross River states. Beyond training a small number of health care workers, some budget for NEHSI-originated activities, and the development of software for the HDSS, the outcomes did not contribute significantly to personnel financing, logistic support, information technology or communication systems.

### Processes:

*Indicators: To monitor the system's effectiveness, it needs measurable sets of data that reflect change over time. The results framework of the NSHDP contains the indicators, inclusive of the MDGs goals, to monitor the performance of the Nigerian health system. Bauchi and Cross River states also have results matrices for their respective state strategic development plans. What did NEHSI contribute through its outcomes? NEHSI's data systems, the MSS, HDSS and CSS*

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<sup>19</sup> World Health Organization, <http://www.who.int/healthsystems/about/en/> accessed June 2010.

<sup>20</sup> Federal Ministry of Health: NHMIS Policy, Programme and Strategic Plan of Action. 1997.

generated relevant data for the indicators of the performance of their respective health systems. NEHSI also contributed in developing software to enable interoperability of transfer of data from the states to the NHMIS's District Health Information System software. The indicators derived from NEHSI data systems were more state-specific and relevant beyond the higher level indicators for tracking national trends.

*Data sources: A combination of sources, both periodic and continual, provides the best quality information most efficiently.* The legacy of NEHSI here was substantial as its outcomes demonstrated easily adaptable and functional approaches for data collection (the MSS-Social Audit, CSS, and HDSS methods). Whereas, for example the MSS-Social Audit data system followed pre-determined cycles, the CSS and the HDSS were more regular as they involved frequent household follow-up visits. These systems provided the basis for most of the evidence-generation of the initiative. That NEHSI, through its outcomes, successfully demonstrated complementary approaches to filling gaps in health information system protocol in Nigeria is its strongest contribution to health system strengthening.

*Data management: Necessary to get best collection, storage, quality-assurance, processing, compilation and analysis.* NEHSI was able to influence the establishment of structural and functional new units for data management, such as the Cross River State Sector Wide Social Audit Programme that now oversees the implementation of the erstwhile MSS component of NEHSI; and similarly, in Bauchi, NEHSI contributed to the creation of units under the State Primary Health Care Board to entrench the MSS concept. The functionality and quality of the operation and processes of the newly established data management units will, in our judgment, be far more relevant than their establishment.

## **Outputs**

*Information products: Data transformed into information that can be used by decision makers to improve health care.* In response to the need for information products, NEHSI made substantial inroads in strengthening these aspects of the HIS in the two states. Data have been transformed into series of scorecards, docudramas and factsheets and these have been widely disseminated and are in use by the two states for decision-making. Some of these can be found on the state websites.

*Dissemination and use: The value of information is enhanced by being accessible to decision makers and by providing incentives for information use.* NEHSI products have been widely disseminated and are in use. NEHSI data systems have been used by all the 20 LGAs in Bauchi for planning. The Bauchi State Strategic Health Development Plan and the Bauchi State Medium Term Development – 2013-2015, from which annual budgets are derived; and the Local Economic Empowerment Development Strategies documents in Cross River State have relied on data generated and disseminated by NEHSI to undertake budgeting and resource allocation and to undertake strategic development plans.

Viewed against the background of the HMN framework, NEHSI made major contributions under some of the components required for a strong health information system in the two states. Through the implementation of its approach, NEHSI's outcomes demonstrates proof that sustainable changes can be influenced to generate evidence and use evidence for decision-making and actions across multiple levels of responsibilities.

## **Appendix 1: Biographies of the authors of the report**

### **Muhammed M Lecky**

With approval from the Evaluation Sub-Committee, IDRC asked Muhammed Lecky (ML) to serve as a senior national technical advisor to the Sub-Committee and a national team of evaluators. He became part of the three member team of advisors (TechCom) which subsequently completed the evaluation and authored this report after the national evaluation team withdrew. In this capacity he: a) served as an informant for many outcomes, coordinated the harvesting of others, and coded the outcomes derived from the Most Significant Change stories; b) interpreted with SM the outcomes to answer the first evaluation question; c) interpreted with R W-G the outcomes to answer the second evaluation question; d) drew with SM conclusions about NEHSI's achievements in the light of the Health Metrics Network framework; e) wrote the introductory NEHSI background sections of the report; and f) critically reviewed the entire report.

Muhammed Lecky is the Executive Secretary of the Health Reform Foundation of Nigeria (HERFON). He also serves as a Senior Policy & Strategic Adviser to Canada International Development and Research Center (IDRC) on the NEHSI project. Prior to joining HERFON in February 2013, Dr. Lecky had been, for eight years the Director of Planning, Research & Statistics at the Federal Ministry of Health, Nigeria; and had served as the Executive Secretary/CEO of the National Health Insurance Scheme (NHIS), and he started the commencement of nationwide health insurance coverage for the first time in Nigeria in June 2005. Dr. Lecky had been a Research Fellow/Associate at the Harvard School of Public Health; Consultant at the United Nations Population Division, New York; UNICEF; UNDP; and for several years, served as consultant to the World Bank on the Nigeria Health Systems Fund Project. Dr. Lecky is a Health-Demographer with a PhD from the University of California, Berkeley, and was a Post-Doctoral MacArthur Foundation Fellow at the Harvard University School of Public Health; and a past Fellow of the Survey Research Center, University of Michigan at Ann Arbor. Dr. Lecky has had many notable work in the Nigeria health system, leading the development and implementation of a number of major health policy initiatives: National Health Policy; Presidential Initiative for Accelerated Achievement of Health Millennium Development Goals; the Health Sector Reform Programme, 2004-2007; and Chair, National Reference Group on the National Strategic Health Development Plan (National Health Plan), 2010-2015. He has worked as a consultant in health systems strengthening in the Seychelles' Island, Botswana, WHO – HQ, Geneva, WHO-Africa Regional Office, Brazzaville, Namibia, and Sierra Leone.

### **Sarah BJ Macfarlane**

With approval from the Evaluation Sub-Committee, IDRC appointed Sarah Macfarlane (SM) to serve as a senior international technical advisor to the Sub-Committee and a national team of evaluators. She became part of the three member team of advisors (TechCom) which subsequently completed the evaluation and authored this report after the national evaluation team withdrew. In this capacity she: a) organised and coded with RW-G the outcomes in the Excel database; b) analysed the outcomes quantitatively, organised them in outcomes tables and wrote the accompanying narrative descriptions to answer the first evaluation question; c) interpreted with ML the outcomes and answered the first

evaluation question; d) drew with ML conclusions about NEHSI's achievements in the light of the Health Metrics Network framework; and e) organised and edited the entire report.

Sarah Macfarlane is a Professor in the Department of Epidemiology and Biostatistics, and in Global Health Sciences, at the University of California, San Francisco (UCSF). She holds a Master of Science degree in Operational Research from the London School of Economics and a Doctorate in Medical Statistics from the University of London. She is a Fellow of the Faculty of Public Health of the Royal Colleges of Physicians, and a Chartered Statistician of the Royal Statistical Society.

Dr. Macfarlane worked for many years at the Liverpool School of Tropical Medicine where she became Reader in Epidemiology and Statistics, and Head of the Unit for Statistics and Epidemiology. Between 1998 and 2004, she was Associate Director of Health Equity at the Rockefeller Foundation, where she had responsibility for supporting public health programs in sub-Saharan Africa and South East Asia. She worked on capacity-building programs such as the Public Health Schools Without Walls Program and the International Clinical Epidemiology Network, and supported the development of the East African Integrated Disease Surveillance Network and the Mekong Basin Disease Surveillance Network. At UCSF, she leads an institutional partnership between Muhimbili University of Health and Allied Sciences in Tanzania, and is a Visiting Professor to the Aga Khan University East Africa.

Sarah Macfarlane has a long-term interest in the development of health information and surveillance systems, and has worked with PARIS21, the African Development Bank, international agencies and statisticians in national statistics bureaus, line-ministries, ministries of local government, and research and training institutions to support mainstreaming of sectoral statistics into national statistical systems.

Dr Macfarlane has worked for ministries of health, international agencies, and universities in Cambodia, China, Eritrea, Jordan, Gambia, Ireland, Italy, India, Indonesia, Kenya, Laos, Malawi, Nigeria, Sudan, Sweden, Tanzania, Thailand, Uganda, UK, US, South Africa, Switzerland, Vietnam, and Zimbabwe.

### **Ricardo Wilson-Grau**

With approval from the Evaluation Sub-Committee, IDRC asked Ricardo Wilson-Grau (R W-G) to serve as a senior international technical advisor to the Sub-Committee and a national team of evaluators. He became part of the three member team of advisors (TechCom) which subsequently completed the evaluation and authored this report after the national evaluation team withdrew. In this capacity he: a) reviewed, edited and coded with SM the harvested outcomes; b) identified the sustainability outcomes and organised them in an appropriate way to answer the second evaluation question; c) provided advice on outcomes harvesting to ML and SM; d) wrote the methodology section and the introductory interpretation of the answers to both evaluation questions; and e) critically reviewed the entire report.

Ricardo Wilson-Grau is an independent evaluator and organizational development consultant supporting social change organizations, and in particular international networks and development donors. He resides in Brazil.

A graduate *magna cum laude* of the Universidad de Puerto Rico, he holds an MA in the political economy of development from Goddard College, Plainfield, VT, USA. Ricardo has worked in international development since the 1960s, including as a surveyor and community development worker in Colombia, field director for the American Friends Service Committee in Guatemala, director of the Latin American

Programme of experiential Friends World College, journalist and managing director of Inforpress Centroamericana in Guatemala, senior manager with Greenpeace International in Amsterdam, and foreign aid advisor with Novib, the Dutch Oxfam. Ricardo has written for publication and lectured in English, Spanish and Portuguese on the economy and politics of Central America in the 1980s, strategic risk management in development, civil society development, and evaluating international networks. He has worked in over eighty countries on all seven continents.

Since 2003, he has concentrated his work on the monitoring and evaluation of two dozen international social change networks and the programmes of ActionAid, Doen Foundation, Hivos, IDRC, Ford, Oxfam Novib, PSO, the Open Society Institute, UN Trust Fund to End Violence Against Women, and the World Bank Institute. With colleagues, he developed the “Outcome Harvesting” tool that now has harvested thousands of outcomes of three hundred NGOs, CBOs, government agencies, multilaterals, research institutes and networks around the world. His organisational development work is primarily in adapting Outcome Mapping to the planning, monitoring and evaluation needs of networks.

Ricardo is chair of the board of stewards of the Outcome Mapping Learning Community, a member of the steering committee for the Network for Peacebuilding Evaluation and an active member of the American Evaluation Association and International Development Evaluation Association (IDEAS).

## Appendix 2: Components of NEHSI

Multi-Stakeholder Information and Planning System (MSS): a system that works with state and local government officials of data collection, training, mentoring and socialising of data to link to the planning process. This system generates data through household surveys, links this data to health facilities located within the communities, analyses the information from the perspective of different stakeholders, and integrates it into existing health and information systems for actionable change to policy and practice. The MSS has two distinct phases: a data generation phase, which follows a government-identified priority, consultation, development of data collection instruments, household surveys, facility and community profiles, focus-group discussions (this is cumulatively referred to as a **social audit** and has training elements at each step); and a **Socialising the Evidence for Participatory Action (SEPA)** phase which consists of feeding the evidence into the various sub-systems which exist at community and within state-level governmental structures that can build pressure for change in Bauchi (LGAs Giade, Toro and Darazo) and Cross River (LGAs Abi, Yala, Cross River South). Throughout the life of NEHSI three complete cycles of *Social Audit/SEPA* are expected. Each cycle builds on the evidence and resultant changes from the previous cycle. Some outputs have been scorecards at LGA and state level and docudramas.

Demographic Surveillance System: a health information system which monitors demographic events over time. Within NEHSI two different methods of surveillance are being undertaken to strengthen the NHMIS:

Health and Demographic Surveillance System (HDSS): a globally recognised mechanism where trained enumerators conduct household visits regularly to collect demographic information (births/deaths) in order to measure burden of disease trends over time within a distinct Demographic Surveillance Area (DSA). Based on consultation in the planning stage of NEHSI, this HDSS was asked to not be a parallel system rather be a catalyst and link to the NHMIS. The NEHSI HDSS also innovates by revitalising the current data management system (i.e. software) for the HDSS to allow the HDSS to link systematically to the NHMIS. This resulting software (referred to as OpenHDS) will be used within the NEHSI DSA and will also be available for use within the broader HDSS community. The HDSS is being undertaken by the University of Calabar for the Cross River HDSS. This is on-going in Akpabuyo LGA. The OpenHDS is being developed by the University of Southern Maine, USA.

Community Surveillance System (CSS): This surveillance system arose in request by the Bauchi State government and focuses on maternal health. Working within the existing NHMIS, household monitoring visits have been structured to identify, in a real-time manner, households at risk of suffering maternal ill-health. Critically, the CSS is linking the NHMIS to health facilities for clinical action, something that currently does not happen. In theory the NHMIS is supposed to collect this data from households several times a year, but is limited due to problems like inadequate skills of the cadre of health workers who are supposed to collect this data (Community Health Extension Workers (CHEWs) and Junior CHEWs (JCHEWs)) and lack of printed forms. The NEHSI CSS trains data collectors and use mobile phones as a way of addressing these problems. The CSS builds on the findings of the first MSS cycle and

is being implemented by CIET Trust in one LGA (Giade – based on government inputs).

Evaluation Systems: NEHSI has several in-built methods of evaluation to measure the effects of the distinct components – and their cumulative impacts. As part of NEHSI’s commitment to the National Strategic Health Development Plan (NSHDP), NEHSI supports capacities for monitoring and evaluation development at federal and state level. This work is directly managed by IDRC’s Evaluation Unit for NEHSI.

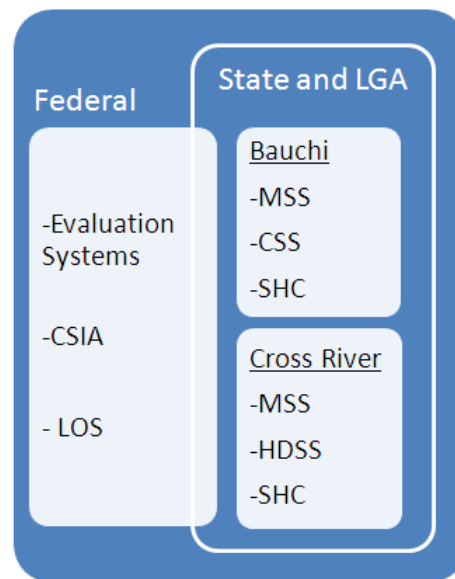
Capacity Strengthening for Information Access (CSIA): as part of the loop of using evidence in decision-making NEHSI is supporting the strengthening of capacities to access and use existing published health literature at FMOH for librarians and information end users alike. These include training and raising awareness to access and use such schemes as WHO’s HINARI, AGORA, the Cochrane Collaboration, and other more “hidden” online resources. The initial work was done by the information management division of IDRC and then another institution was selected to develop a guidebook. However this latter initiative has been cancelled. In place IDRC is supporting

platforms for exchange of evidence at the Federal level.

Sustainable Human Capital (SHC) for Evidence-based Planning: this element constitutes part of NEHSI’s exit and sustainability strategy whereby training is geared towards the LGA (and possibly at State and Federal) levels to keep human resources there and build a cohort of people skilled in evidence-based planning in six LGAs. CIET Trust is responsible for implementing the SHC component of NEHSI. This component involves short courses throughout the project life leading to a diploma or Master’s level degree in Epidemiology. In addition this component has executive level courses.

Linkages, opportunities and sustainability (LOS): Given the modular and multi-partnership nature of NEHSI and the complexity and the political nature of any health system, NEHSI has flexibility to support opportunities that will: a) improve relationship between the federal and state level health systems and the flow of information; b) inform and support scale up of the NEHSI approach or the ‘parts’ of NEHSI that are demonstrating positive change from a health systems strengthening perspective; and c) support sustainability of the initiative including exit strategy and further capacity strengthening. This component is led by IDRC and includes supporting the governance structure of NEHSI.

### **NEHSI Components Diagram**



## Appendix 3: Overview of the Outcome Harvesting approach

Outcome Harvesting can be used for either monitoring or evaluation of projects, programs or organisations. Depending on the situation, either an external or internal person can be designated to lead the Outcome Harvesting process. To ensure success, the harvester recruits the participation of the change agents actively influencing the outcome – the change in one or more social actor. The user who requires the findings of the harvest is also engaged throughout the process. The process consists of six iterative steps:

1. **Design the Outcome Harvest:** Harvest users and harvesters identify useable questions to guide the harvest and agree what information is to be collected as the *outcome description* in addition to the changes in the social actors and how the change agent influenced them.
2. **Review documentation and draft outcome descriptions:** Harvesters extract changes in social actors from reports, evaluations, and press releases along with documentation on what the change agents did to contribute to them.
3. **Engage with informants in formulating outcome descriptions:** Harvesters engage directly with the change agent informants to review the outcome descriptions extracted from the files, identify and formulate additional outcomes, and classify them all. Informants will often consult with others inside or outside their organization who are well-informed about outcomes to which they have contributed.
4. **Substantiate:** Harvesters obtain the views of one or more independent people knowledgeable about the outcome, or a representative group of outcomes, and how they were achieved, to enhance the validity as well as the credibility of the findings.
5. **Analyse and interpret:** Harvesters organise outcome descriptions through a database in order to make sense of them, analyse and interpret the data and provide evidence-based answers to the useable harvesting questions.
6. **Support use of findings:** Harvesters propose points for discussion to harvest users grounded in the evidence-based answers to useable questions. Discussions with users might include how they could make use of findings. The harvesters also wrap up their contribution by accompanying or facilitating the discussion amongst harvest users.

### OUTCOME HARVESTING CONCEPTS

**Change agent:** The individual or organisation that influences an outcome.

**Harvest users:** The people who require the findings of an Outcome Harvest to make decisions or take action.

**Harvesters:** People responsible for managing the Outcome Harvest.

**Outcome Description:** The written formulation of *who* changed *what*, *when* and *where*, and *how* it was influenced by a change agent. May include the outcome's significance, context, and history, amongst other dimensions.

**Outcome Harvest:** The identification, formulation, analysis and interpretation of outcomes to answer useable questions.

**Outcome:** Change in the behaviour, relationships, actions, activities, policies or practices of a social actor.

**Social actor:** Individual, group, community, organisation or institution.

**Substantiation:** Confirmation of the substance of an Outcome Description by an informant knowledgeable about the outcome but independent of the change agent.

**Useful questions:** Questions that guide the Outcome Harvest because the answers to them will be put to use by the harvest users.

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\* This tool was developed by Ricardo Wilson-Grau with colleagues Barbara Klugman, Claudia Fontes, Fe Briones Garcia, Gabriela Sánchez, Goele Scheers, Heather Britt, Jennifer Vincent, Julie Lafreniere, Juliette Majot, Marcie Mersky, Martha Nuñez, Mary Jane Real, Natalia Ortiz and Wolfgang Richert over the past 8 years through monitoring and evaluating the achievements of hundreds of networks, NGOs, research centres, think tanks, community-based organisations around the world. For further information: [ricardo.wilson-grau@inter.nl.net](mailto:ricardo.wilson-grau@inter.nl.net).



## Appendix 4: People consulted

Abdullahi	Abdulkadir		Bauchi State Primary Health Care Development Agency
Agim	Joseph		Assistant Director
Ahmed	Muhammed	D	Deputy Director, State Primary Health Care Development Agency
Alhaji	A. A	Othman	NEHSI – State Policy Liason, Bauchi
Aliyu	A	Abubakar	Deputy Director, Public Health, Bauchi State Ministry of Health
Aliyu	Tela	Garo	Bauchi State Ministry of Health
Barnoma	Jubrin	Muhammed	Deputy Director, Research & Statistics, Bauchi State Ministry of Health
Damina	Ahmed	Muhammed	Deputy Director, Planning, Research & Statistics, Bauchi State Ministry of Health
Dominic	O	Ogri	Statistician
Fateh	Abubakar	M	Permanent Secretary, Bauchi State Ministry of Health
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Inuwa	Fatima		CIET, Supervisor, Darzo
Isa	Hajara		CIET, Field Coordinator, Darzo
Iwara	Arikpo	Dr.	NEHSI – University of Calabar
Iyan	Ugot	Dr.	Special Adviser to Governor of Cross River State
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Kahild	Omar	Dr.	CIET, State Team Leader, Bauchi
Khan	Amir	Prof. Dr.	CIET, Deputy State Team Leader, Bauchi
Mary	Omaji		Director, Planning, Research & Statistics, State Ministry of Health, Calabar
Muhammed	Chadi	Baba	CIET, CSS Coordinator
Muhammed	D	Jibrin	Planning Officer, Bauchi State Ministry of Health
Ndem	Ayara	Prof.	State Economic Adviser to Governor of Cross River State
Ogar	Josephat		Director, Statistics, State Planning Commission, Calabar
Partor	Bong	Duke, Dr.	Personal Assistant to Governor of Cross River State
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Salisu	Abubakar		CIET, Coordinator, Toro
Sani	A	Malami Dr.	Commissioner for Health, Bauchi State Ministry of Health
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Usman	Umar	Muhammed	Monitoring & Evaluation, Bauchi State Ministry of Health
Yagana	Mohammed	Gidado	CIET, Field Coordinator, Bauchi
Yarima	Yahaya	Dr.	Director, Disease Control, Bauchi State Ministry of Health
Yusuf	R	Dr.	Director, Medical Services, Bauchi State Ministry of Health