



## FOREWORD

Papua New Guinea has experienced an unprecedented resource boom over the last decade that has led to a rapid rise in revenue and subsequent increases in public expenditure. The PNG Government and its donors have also implemented major reforms aimed at improving access to basic services across the country. However, the question remains as to whether our nation's booming mineral wealth has translated into services for ordinary people.

In an effort to provide some answers to these important questions, the joint NRI-ANU Promoting Effective Public Expenditure (PEPE) Project completed extensive expenditure tracking and facility surveys across eight provinces at the end of 2012. Survey teams visited 216 primary schools and 142 health clinics from the nation's capital to some of PNG's most remote and isolated communities. Altogether 1,276 interviews were completed, making it one of the largest and most comprehensive service delivery surveys completed in PNG. The PEPE survey was subject to difficulties and logistical problems associated with the large scale of the survey and the need for survey teams to operate in very remote parts of the country. The success of the survey was dependent not only on extensive planning but on the dedication, commitment and effort of the surveyors.

Many of the same schools and health clinics were visited in a similar survey conducted in 2002 that was also undertaken by NRI. By combining findings from both surveys, this report can compare changes in schools and health clinics between 2002 and 2012. The aim is to provide the basic information, which not only the Government of Papua New Guinea but also the people need to assess progress and suggest changes for better spending in the future.

This report and the unique data set on which it is based will be an invaluable resource for PNG's policy makers and people.

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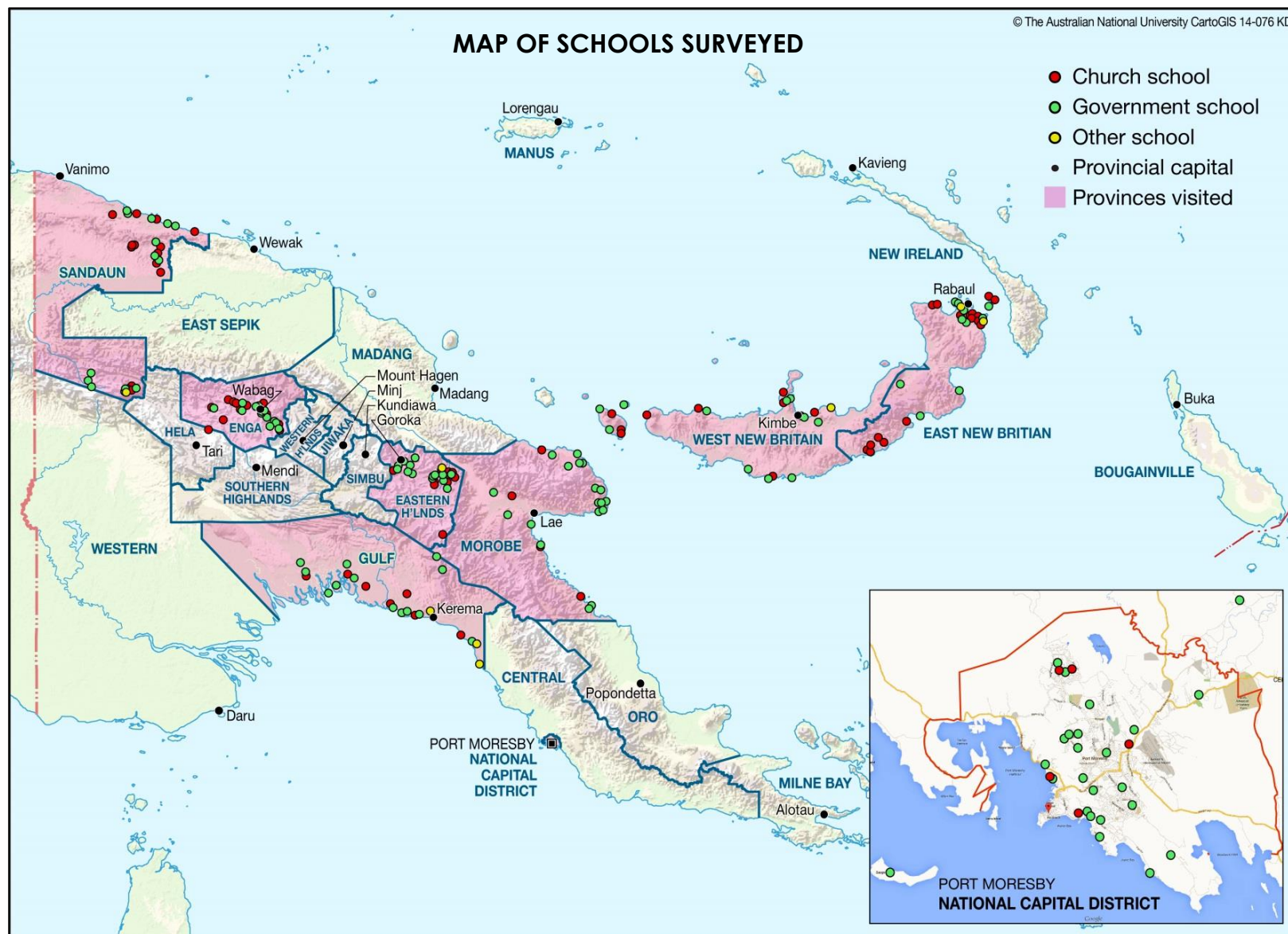
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The authors take full responsibility for the content of this report. It represents their views, and are not necessarily those of the institutions they represent or who have funded or supported this research, nor of any the individuals mentioned on the previous page.



*The PEPE advisory group meets at NRI in Port Moresby, September 2014.*



*From: CartoGIS, The Australian National University.*

*Note: Health clinics within a one-hour range of the schools were also surveyed.*



## SUMMARY

Has PNG been able to translate its economic boom into services for ordinary people?

In 2012, we surveyed 360 primary schools and health care clinics across eight provinces, from the nation’s capital to its most inaccessible regions. Many of the same facilities were also surveyed in 2002.

We found that PNG’s primary schools have expanded rapidly over the last decade, but that fewer services are now provided by its health clinics.

A summary of our key findings and our explanations for them is contained in the text and tables below.

### Education

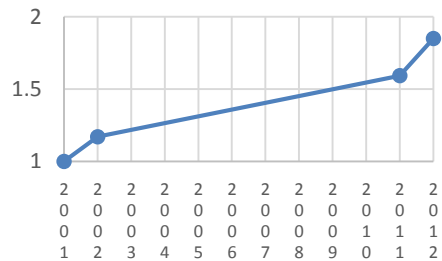
For education, the 2000s was a decade of expansion.

Table 1 summarises a number of indicators for 2002 and 2012. These are based on interviews with Head Teachers, Grade 5 teachers, Board of Management (BoM) Chairs, and P&C or other community representatives at 214 schools in 2002 and 216 in 2012.

For enrolments, we actually have data for 2001, 2002, 2011 and 2012. We can see from this data (shown in the figure opposite) that enrolments in the average primary school have been on the increase throughout the decade, with a cumulative increase of 85 per cent since 2001 and 58 per cent since

2002. (On top of this, the number of schools has increased over the last decade as well.) Note from the figure how the growth in enrolments was turbo-charged by the abolition of tuition fees in 2002 and then again in 2012 (the first abolition was shortlived, as fees were re-introduced in 2003).

**Growth in student enrolments  
(2001=1)**



The growth in enrolment was much faster among girls. The share of girls among total enrolled students grew from 30 to 46 per cent between 2002 and 2012. By 2012, there were 144 per cent more girls enrolled at the average school than there were in 2002.

Enrolments grew more rapidly than attendance. The proportion of Grade 5 students at school on the day of the survey fell from 84 to 71 per cent between 2002 and 2012. While the rising level of absenteeism is a problem, there are still many more students in school today than ten years ago. The proportion of community representatives saying that most of the children in their community went to school increased from 62 to 70 per cent between 2002 and 2012.

**Table 1: PNG primary school performance in 2002 and 2012: a summary**

		<b>2002</b>	<b>2012</b>	<b>Growth</b>
<b>Students</b>				
Enrolments	no.	186	294	58%
Share of girls in enrolments	%	30	46	55%
Grade 5 attendance rate	%	84	71	-15%
Grade 5 missed more than 10 days in Term 3	%	9	18	100%
Most children in community attend school	%	62	70	13%
<b>Classrooms</b>				
Number	no.	6.9	8.4	22%
Made of permanent materials	%	63	73	16%
Needing rebuilding	%	32	32	0%
Needing maintenance	%	38	41	8%
With chair & table for teacher	%	44	74	68%
Enrolled students/functioning classroom	no.	38	53	26%
<b>Facilities</b>				
Year-round drinking water	%	58	72	24%
Enough female toilets	%	56	61	8%
Schools with electricity	%	15	27	80%
Infrastructure index		54	60	11%
<b>Teachers</b>				
Positions	no.	7.9	9.6	22%
Working	no.	6.5	8.7	34%
Absenteeism	%	15.1	13.0	-15%
Paid at grade	%	52	89	71%
Paid allowances	%	35	34	-3%
Teacher usually on time	%	69	59	-15%
Teacher usually teaching	%	69	65	-4%
Student/teacher ratio	no.	31	36	14%
<b>Teacher housing</b>				
Number	no.	5.2	6.8	30%
Teacher positions per functioning house	no.	2.5	2.6	12%
Made of permanent materials	%	48	58	21%
Needing rebuilding	%	32	32	0%
Needing maintenance	%	36	39	9%
<b>Textbooks</b>				
Average per subject per grade	no.	29	34	16%
Average students per textbook	no.	2.0	2.2	10%
Enough textbooks	%	24	31	29%
<b>Accessibility</b>				
Time to get to a bank	hrs.	3.9	5.3	36%
Time to acquire mobile reception	hrs.	1.9	0.9	-53%
Remoteness index	hrs.	3.0	3.5	17%
<b>Supervision by Standards Officer (SO)</b>				
At least one SO visit a year	%	56	64	14%
SO checked records	%	56	68	21%
SO submitted report	%	65	80	23%
SO observed classes	%	58	62	7%
<b>Board of Management (BoM)</b>				
BoM meetings	no.	4.0	4.0	0%
BoM membership	no.	8.8	8.0	-9%
BoM effective	%	77	67	-13%
Most say over school subsidy	%	48	67	40%

		2002	2012	Growth
<b>P&amp;C Committee</b>				
Schools with P&C	%	95	96	1%
P&C meetings	no.	3.7	3.9	5%
<b>School revenue</b>				
Total revenue	2012 kina	35,031	87,486	150%
Total revenue per student	2012 kina	159	336	111%

Notes: Functioning classrooms or houses are ones that don't need to be rebuilt. Students per classroom (teacher) are enrolled students per functioning classroom (working teacher). Teacher absenteeism is the number of teachers absent on the day divided by those regularly working. Textbooks refer to Grade 5 and 6 language and maths textbooks. The main informant for these questions was the Head Teacher, but the views on whether teachers are on time and usually teaching, on whether the BoM is effective, and on whether most children in the community attend school are those of the P&C representative (parent in 2002). Grade 5 teachers were asked whether there were enough textbooks, and about Grade 5 attendance and absenteeism. School revenue data from the 2002 survey measures school revenue received in 2001 as 2002 was an exceptional year for funding. 2001 rather than 2002 figures also used where full-year data required (number of BoM and P&C meetings, and whether SO visits) as 2002 survey was mid-year. All figures based on the full samples of 214 schools in 2002 and 216 schools in 2012.

Schools had more teaching positions assigned to them over the decade, and fewer positions were vacant. The average school had 6.5 teachers working in 2002 but 8.7 in 2012, an increase of one-third. Yet, with rapid enrolment growth, the student-teacher ratio rose from 31 to 36.

In 2002, the number of 'ghost' teachers – that is, teachers on the payroll but not at the surveyed school – was in the range of 12-15 per cent. By 2012, this had fallen to zero. Absenteeism among teachers (on the day of the survey) also fell slightly. Community perceptions of teacher punctuality fell and those of the time spent teaching fell slightly.

Schools were also physically bigger by 2012. The average school had 6.9 classrooms in 2002, but 8.4 in 2012. More classrooms were made of permanent materials (73 per cent up from 63), and more had

a chair and table for the teacher (74 per cent up from 44). Unfortunately, the number needing rebuilding was unchanged at 32 per cent, while the number requiring maintenance increased slightly from 38 to 41 per cent. The number of enrolled students per functioning classroom (that is, classrooms which do not require rebuilding) increased sharply from 38 to 53.

Teacher housing is critical for PNG's largely rural schools. The average number of houses for teachers per school increased from 5.2 to 6.8. More houses were made of permanent materials, but the same proportion required rebuilding. The number of teacher positions per functioning house increased but only marginally from 2.5 to 2.6.

The quality of other school facilities generally improved, though remained far from satisfactory. The percentage of schools with year-round

drinking water increased from 58 to 72 per cent, and with enough female toilets from 56 to 61 per cent. The proportion of schools with electricity increased from 15 to 27 per cent.

The average number of textbooks per subject per grade went up from 29 to 34. (We looked at Grades 5 and 6 maths and language books.) The average ratio of students to textbook increased slightly from 2.0 to 2.2, though there is a lot of variation from subject to subject and grade to grade. Only 31 per cent of Grade 5 teachers thought that they had enough textbooks, but this was up from 24 per cent in 2002.

Changes in school accessibility were mixed. In 2012, the average school was still one hour away from mobile phone reception, but this was better than the two hours in 2002. The average school was also five hours away from a bank in 2012, up from four in 2002. Overall, on a remoteness index measuring distance from a number of key facilities, the surveyed schools become slightly more remote over the decade.

64 per cent of schools received a visit from the district-level Standards Officer (school inspector) in 2012, up from 56 per cent in 2002. Standards Officers also seemed to be more active, with more of them submitting reports and checking records.

Nearly all schools have Boards of Management (BoMs). These

are statutory bodies (required under legislation) with responsibility for school buildings and teacher houses, student enrolments, school objectives, and discipline. BoMs have been active over the past decade, with eight to nine members, and on average four meetings a year.

School P&C Committees (also required by legislation) also exist at nearly all schools (96 per cent). They are also active, meeting four times a year. 67 per cent of P&C representatives viewed the BoM as effective, down from 77 per cent in 2002.

The improvement in school indicators reflects better funding over the decade. After adjusting for inflation, average school revenue increased by 150 per cent from 2001 to 2012 to reach K87,500, and average school revenue per student increased by 111 per cent to reach K340. Over the decade, national government subsidy payments to schools more than compensated schools for their loss of fee revenue paid by parents.

Subsidy payments are reaching schools, mainly through bank accounts. By the time of our survey, 84 per cent of schools had received both their 2012 subsidy payments. Almost 80 per cent of schools received these payments through their bank accounts.

There is extensive involvement of the BoM in the management of subsidies, but more supervision is required. 67 per cent of Head Teachers regarded



the BoM as having most say over the spending of school subsidy payments in 2012, up from 48 per cent in 2002. But only 39 per cent of schools received a supervisory visit to check on subsidy payments in either 2011 or 2012.

There was enormous provincial variation in the survey. The proportion of communities saying that most of their children went to school rose from 37 to 90 per cent over the decade in East New Britain, but fell from 63 to 37 per cent in Gulf. Less remote schools have better facilities than more remote ones, but not necessarily smaller class sizes.

In summary, PNG's primary schools show more progress than regress over the last decade, but have been struggling to keep up with the surge in enrolments.

## Health

The 2002 survey was more focused on education than health. The comparisons we can provide over time for health are limited, but telling. Table 2 summarises survey responses from Officers in Charge at 117 health clinics (aid posts and health centres) in 2002 and 142 clinics in 2012.

Clinics tended to be open for slightly longer every week, but this included a large number which were only open if they had patients to see. The number of patients who visited a health clinic on a typical day fell from 46 to 37, and on the day before the survey from 40 to 28. This is

particularly worrying given rapid population growth and since the number of health clinics in PNG has been falling.

The average availability of six basic drugs and supply items fell from 82 to 74 per cent. The number of health worker positions increased from 4.8 to 5.4 per clinic, but the number of health workers who turned up regularly was unchanged at 4.1. The number actually present at the time of the survey fell from 3.4 to 3.2.

We collected a lot more data in 2012 than in 2002 about health clinics. If we look at PNG's primary health care system today we see a system struggling against the odds, and unable to fulfil basic functions.

Table 3 summarises the additional data we obtained about health clinics in 2012 from interviews with the Officer in Charge and a user at each clinic. Our researchers came across many examples of retired health workers continuing to service their community as volunteers. 75 per cent of health workers said they used part of their own salary to meet the needs of the health service.

Clinic rooms, like classrooms, are in a state of disrepair. In 2012, 67 per cent of clinic rooms and 77 per cent of health worker accommodation needed rebuilding or maintenance. Just 41 per cent of clinics had refrigeration, and 40 per cent electricity. Only 20 per cent had beds with mattresses, and only 23 per cent had a kitchen. 55 per cent had year-round water

access. Only 30 per cent had access to fuel, and only 33 per cent could transfer patients.

Oversight is weak in the primary health sector. In 2012, only 40 per cent had a visit from their administrative supervisor, and indeed only 64 per cent said that they had an administrative supervisor.

Community engagement is also low. Only two-thirds of health clinics have a Village Health Committee (similar to the P&C Committee for schools) and in 2012 they only met just over twice a year on average.

The deteriorating performance of PNG's primary health care sector is linked to weak finances. Despite large

increases in health function grants to provinces to fund operational costs for health clinics, 41 per cent of clinics reported receiving no external financial support in 2012. Only 25 per cent submitted a budget, and only 18 per cent received funding. 29 per cent relied solely on user fees to cover operating costs. 12 per cent of the clinics we surveyed had no user fees or external support: that is, no means to cover any non-salary costs.

There was significant variation across provinces. In general, East New Britain stood out as a top performer, with the most patrols, and highest maintenance levels and proportion of positions filled.

**Table 2: PNG health clinic performance in 2002 and 2012: a summary**

		2002	2012	Growth
<b>Days open &amp; patient visits</b>				
No. days open in a week	days	6.2	6.5	5%
Patient visits in a typical day	no.	46	37	-19%
Patient visits the day before	no.	40	28	-29%
<b>Availability of basic drugs &amp; supplies</b>				
Paracetamol	% facilities	81	77	-5%
Fansidar	% facilities	94	95	1%
Chloroquine	% facilities	99	95	-4%
TB	% facilities	52	36	-31%
Condoms	% facilities	95	82	-14%
Liniment	% facilities	72	60	-17%
Average	% facilities	82	74	-10%
<b>Health workers</b>				
Positions	no.	4.8	5.4	11%
Regularly turn-up	no.	4.1	4.1	0%
Present	no.	3.4	3.2	-4%
<b>Supervision</b>				
Visit from a Health Extension Officer	%	31	34	10%
Visit from a doctor	%	19	11	-42%

Note: Based on responses from the Officer in Charge, and on the full samples for both years of 142 clinics in 2012 and 117 in 2002.

**Table 3: PNG health clinic performance in 2012: additional indicators**

	<b>Unit</b>	<b>2012</b>
<b>Health workers</b>		
Paid at grade	%	55
Paid allowances	%	30
Use pay to deliver services	%	75
Health workers always or often available	%	70
Number of years in position	years	8.9
<b>Outreach</b>		
No regular health patrols (health centres only)	%	73
Has access to fuel	%	36
Can transfer patients	%	33
<b>State of buildings</b>		
Clinic rooms need rebuilding	%	24
Clinic rooms need maintenance	%	43
Housing needs rebuilding	%	40
Housing needs maintenance	%	37
Maintenance not undertaken in 2012	%	68
<b>Clinic facilities</b>		
Electricity	%	40
Refrigeration	%	41
Year-round water access	%	55
Access to ambulance	%	23
Beds with mattresses	%	20
Kitchen	%	23
Enough toilets	%	51
<b>Village Health Committees</b>		
Clinics with VHC	%	64
No. of meetings	no.	2.2
<b>Supervision</b>		
Has an administrative supervisor	%	64
Has a visit from an admin. supervisor	%	40
<b>Financial support</b>		
Clinics not receiving any external support	%	41
Clinics solely reliant on user fees	%	29
Clinics without external support or user fees	%	12
Clinics receiving user fees	%	83
Clinics submitting a budget	%	25
Clinics receiving funding (cash)	%	18

Notes: Based on responses from OIC, except for 'Health workers always or often available' and the questions about drug supplies which are based on community responses. Other 'Health worker conditions' variables refer to the OIC herself. Health patrols are not regular if there are five or less. All figures based on the full 2012 sample of 142 health clinics.

## Explaining the results

PNG's primary schools show substantial and statistically significant improvements across a range of, though by no means all, performance indicators between 2002 and 2012. The decline in the performance indicators for health clinics is not statistically significant, but nevertheless of concern, especially given rapid population growth.<sup>1</sup>

Our research attempted not only to understand differences between education and health and changes over time, but also to explain them. We did this by looking at differences between sectors and provinces and also at differences between facilities, using regression analysis. Our analysis pointed to four important factors influencing performance.

The first is *financing*. There has been a significant increase in education funding over the last decade, and that funding is reaching the schools. As Table 1 shows, even after inflation, revenue per student more than doubled, and total school revenue increased by one and a half times to reach almost K90,000 for the average school in 2012.

The 2002 survey did not collect financial data on health, but, as noted above, the picture that emerges in 2012 is that many health clinics are starved of external support (see Table 3). Because of this, many clinics are simply not undertaking

basic functions. For example, 73 per cent of health centres reported not undertaking regular patrols, a basic function. The regression analysis undertaken confirms the importance of revenue for activity levels and, for schools, for infrastructure quality.

Another important determinant of performance is *local oversight and supervision*. PNG's schools have well-established local governance arrangements. Nearly all have a functioning BoM and P&C Committee. Health clinics have no equivalent to a BoM, and Village Health Committees are less widespread and active than school P&C Committees. Schools are also more closely supervised by officials than health clinics. The regression analysis shows that schools with closer supervision and better community oversight perform better.

A third factor influencing performance is *agency*. Just over one-third of both schools and clinics in our sample are church-run. In general, church-run clinics receive more funding, and, controlling for other factors, perform more services. The regression analysis shows that teachers at church-run schools spend more time teaching, and that as a result children are more likely to attend church-run schools.

The final performance determinant is the *workforce*. The number of school teachers is

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1. See Tables 3-A1 and 4-A1 for statistical tests of differences in means.

growing, but the number of health workers is at best stagnating. Officers in Charge of health clinics are far less mobile than Head Teachers: the former have on average been in position for nine years, the latter only for three. Almost half of PNG's health workers feel that they are not receiving pay consistent with their position. Interestingly, this was also true for Head Teachers in 2002, but the percentage saying they were not being paid at grade fell from 48 to 11 per cent between 2002 and 2012.

A series of case studies will now be undertaken to provide the basis for more detailed policy recommendations. A number do, however, emerge from this analysis.

The primary health care system is in such a dire state that a sequenced approach is needed to its repair: the first priority should be to get the bigger district-level health facilities working.

The governance of health clinics needs to be improved, through a combination of better local oversight and more intensive supervision. Serious consideration should be given to establishing BoMs for health centres, or asking school BoMs to take responsibility for health centres as well. The health workforce needs to be rejuvenated, and its grievances addressed.

The recent decision to abolish health user fees will likely lead to further deterioration of primary health care. User fees

were the only resource 29 per cent of clinics had to cover non-staff costs in 2012. If the government wants to improve primary health care, it will have to fund it better. It also needs to ensure that this funding reaches all clinics. Whether this is done by direct funding or by better in-kind support requires further research.

For schools, more attention and resourcing needs to be given to supervision to ensure that all schools are regularly visited. BoMs and P&C Committees should be further empowered.

More attention also needs to be given to lifting attendance relative to enrolment. Our results confirm that quality is key for attendance. For example, more teachers need to be hired to reverse the increase in class sizes.

Given the superior performance of church-run schools and health clinics, existing partnerships with church education and health service providers should be expanded.

Finally, regular monitoring through surveys such as this is invaluable. This survey should be repeated in, say, five years' time.