DEVELOPMENT OF A COMPREHENSIVE HUMAN RESOURCES DEVELOPMENT PLAN AND IMPLEMENTATION STRATEGY FOR THE NAMIBIAN BASIC EDUCATION SECTOR

BACKGROUND REPORT

Post Provisioning: Current Dynamics and Future Options
DEVELOPMENT OF A COMPREHENSIVE HUMAN RESOURCES DEVELOPMENT PLAN AND IMPLEMENTATION STRATEGY FOR THE NAMIBIAN BASIC EDUCATION SECTOR

BACKGROUND REPORT

Incorporating Early Childhood Development (ECD) into the Ministry of Education, Arts and Culture

Ministry of Education, Arts and Culture
GOVERNMENT OF THE REPUBLIC OF NAMIBIA

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Finally, we thank our partner, UNICEF, for the support that made this vital project possible. UNICEF’s input and guidance towards inclusive, equitable and quality education for all children in Namibia, particularly the most vulnerable, are always greatly appreciated.
Enrolment rates in Namibian schools have progressively increased since Independence in 1990. The introduction of Universal Primary Education in 2013 and Universal Secondary Education in 2016 has further increased the accessibility of education. The growing demand for schooling in turn creates a need for sufficient teachers in terms of both numbers and specialised training. The report points to the need for teachers who are committed and able to be deployed to the country’s most remote areas. In the project reported on, there is a strong emphasis on post provisioning, meaning the system whereby teachers and other staff are distributed across public schools. The report presents an analysis of this issue, and offers solutions to the current problems.

There remains, however, a concern about the number of teachers being trained in national tertiary institutions, and the specialisations that they are currently undertaking. Also, research points to poor learning outcomes in both primary and secondary education. Learner performance in the sciences and English language remains poor across both of these levels. For example, only 28% of those who took the Namibia Senior Secondary Certificate Examinations (NSSCO) in 2016 received a D grade or higher in English, and only 45% received a D or higher in Mathematics. This poses a serious challenge for creating a new generation of well-qualified teachers, especially when it comes to training higher-level Maths, English and Science teachers.

The Ministry of Education, Arts and Culture requested technical and financial assistance from UNICEF for a comprehensive study of need, supply and demand in respect of human resources in the basic education sector. Research on Socio-Economic Policy (ReSEP), a research group attached to the Department of Economics at the University of Stellenbosch in South Africa, undertook the study to develop a Comprehensive Human Resources Development Plan and Implementation Strategy for the Namibian Basic Education Sector. This project entailed field research in six of Namibia’s regions (//Kharas, Khomas, Otjozondjupa, Ongwena, Kavango and Omaheke), for the purpose of analysing trends in education, current outputs of the tertiary institutions, and the post-provisioning, training and recruitment processes. This report conveys the findings, and provides insight on the enrolment trends, current teacher numbers and attrition rates, and demand and supply in the future. It also examines post-provisioning and recruitment policies, and provides clear recommendations and a comprehensive implementation plan.

It is clear that Namibia faces a dramatic skills shortage in the basic education sector, and that multi-sectoral collaboration is needed to address the shortfall. A collaborative task force has been appointed to address the issues raised in this valuable report. I call on all stakeholders in education to support the Government in addressing the recommendations made in the report.

Katrina Hanse-Himarwa, MP
Minister of Education, Arts and Culture
Namibia’s 14 Regions

The HRDP fieldwork regions

Namibia’s 14 Regions

Otjozondjupa

Oshikoto

Oshana

Kavango

Zambezi

Kunene

Omaheke

Omusati

Khomas

Erongo

Hardap

//Kharaas

Atlantic Ocean

South Africa

Zambia

Angola

Botswana

South Africa

Angola

Zambia

Botswana

South Africa

Human Resources Development Plan for the Namibian Basic Education Sector: Post Provisioning
This report has been produced within a UNICEF-sponsored project titled “Development of a Comprehensive Human Resources Development Plan and Implementation Strategy for the Namibian Basic Education Sector”. There is a strong emphasis in this project on finding solutions to what is referred to as “post provisioning”, meaning the system whereby teachers and other staff are distributed across public schools. This report presents an analysis of the problem, and puts forward solutions, in this area.

Section 2 presents a basic framework for post provisioning. The framework consists of eight steps, including the overall monitoring of the system, the processing of enrolment data, communication work and negotiations around the moving of staff from one school to another, where necessary. Section 3 critiques the Namibian system in terms of the eight steps. The critique draws largely from interviews with key stakeholders and analysis of documents, including policy documents.

Key observations made are the following:

1. A crucial problem in the Namibian post-provisioning system is the lack of sufficient alignment between the budgeting process and the determination of posts per school.
2. There is in effect no national policy on post provisioning, partly because it is not clear to regional officials what the national policy is, and partly because these officials seem to prefer devising their own approaches.
3. Past initiatives to develop a national policy display a relatively good understanding of what post provisioning involves, though how to use the policy to promote equity is not always fully understood.
4. Systems to prevent the fraudulent inflation of learner numbers to attract more teaching posts seem inadequate.
5. The existing distribution of teachers across schools is relatively equitable, at least as far as the basic numbers of teachers are concerned. (The quality of staff would be a separate matter.)
6. Though the data situation in Namibia is relatively healthy, considering the country’s level of development, a few critical pitfalls include virtually no usage of the payroll system for monitoring purposes, poor data on temporary teachers, too little in-year reporting on spending to date against the personnel budget at the regional level, and an incomplete set of geo-coordinates for schools.
7. It is often difficult for a qualified teacher seeking a post at a school to know what vacant posts are available across the whole country.
8. An undersupply of qualified teachers results in the appointment of gap-fill temporary teachers who are underqualified. Appointments of temporary teachers are too often not optimal, partly, it seems, because the policies governing this are weak.
9. Schools and the regional office often clash over who to appoint as a temporary teacher.
Section 4 presents an analysis of the 2012 Annual Education Census data in order to establish, firstly, the ‘architecture’ of the schooling system across which teachers must be distributed, for instance in terms of school size and grades offered, and secondly, the degree to which the existing distribution of teachers is equitable. Maps displaying the distribution of different school grades across the country are provided partly because very little analysis of this nature appears to exist in Namibia. Yet geography is a vital factor for a schooling system in a country as sparsely populated as Namibia. The intention with the analysis provided here is partly to demonstrate what is possible with the available data, and how this analysis can offer a more fine-grained picture of the challenges facing the system. For example, it is only through spatial analysis that one can quantify the distance barriers which reduce access to schooling. To illustrate, this analysis shows that for 11% of learners in Grade 1, the closest Grade 7 offering is over 2 kilometres away from the Grade 1 school, in a straight line, which is, it has been argued, sufficiently far away to result in transportation barriers.

In assessing, within section 4, the degree of inequity in the distribution of teachers, one key question which had to be addressed was what kind of distribution represented the ideal. Using existing policies was difficult, firstly because different regions apply national rules differently and also add their own ones, and secondly, because it is clear that many ad hoc decisions are taken to deal with budget constraints and demands from schools, where these constraints and demands are not well covered in the available policies. The approach taken was to assume that the general patterns in teacher distribution seen across regions are essentially sensible and are unlikely to change radically in the near future. Inequities were then viewed in terms of deviations from this general pattern. This approach seemed justified by the fact that intentions put forward in key policies, in particular a stipulation in a set of 2001 norms that secondary schools experience a learner-teacher ratio (LTR) that is 5 learners below what is seen at the primary level, were largely followed in the actual practice. The conclusion of the analysis in section 4 was that around 6% of teachers would need to be moved in order to produce an equitable distribution. It is further concluded that existing inequities, whilst not huge, are worth worrying about. To illustrate, 8% of learners are in schools where the LTR is too high by a margin of at least 5 learners, whilst for 5% of learners the LTR is too low by a margin of at least 5 learners. Importantly, these measures of inequity can be considered conservative, or the lowest possible. Had the approach been to use a specific policy norm, the deviation between the actual and desired distribution of teachers is likely to have been higher.

Finally, section 5 presents five recommended actions, or areas of action:

1. Establish a proper annual monitoring system based largely on existing data.
2. Establish a more proactive approach to teacher supply.
3. Establish a truly national and budget-sensitive formula on the distribution of school posts.
4. Provide sufficient policy guidance with respect to contingency measures, in particular the employment of temporary teachers.
5. Establish clear dispute resolution procedures to deal with disagreements between the School Board and the region with regard to teacher selections. This is a key section of the report and the reader is urged to read the section in its entirety.
This report was produced as part of a UNICEF-funded project for the Ministry of Education in Namibia aimed at producing a human resources development plan for the basic education sector (i.e. school-based education). The report focuses on the post-provisioning system which determines how many teacher and support staff posts are allocated to each school, and how these posts are filled. The focus in this report is on teachers only, not on support staff based in schools. Many of the problems and solutions applicable to teachers would also be applicable to support staff, though support staff are considerably less complex than teachers as in general support staff do not require high levels of academic specialisation.

Section 2 outlines a general framework for post provisioning. Section 3 assesses the Namibian system, largely on the basis of a literature review and interviews with key stakeholders in Windhoek (during November 2014 and January 2015) and with regional officials (February 2015).

Section 4 uses the available data, in particular the 2012 Annual School Census dataset and geo-coordinates of schools, in order to detect patterns in the distribution of school-based teachers and what this distribution means for future system changes.

Section 5 puts forward a number of policy recommendations.
Section 2
A General Framework for the ‘Post-Provisioning Dynamic’

The establishment and movement of employee posts around a schooling system, in a manner that is as efficient and equitable as possible, plus the process of ensuring that the distribution of ‘warm bodies’, or actual employees, matches as closely as possible the distribution of posts, is a complex and data-heavy matter. This section provides a general framework for this work, which to a fairly large degree is universal, in the sense that many schooling systems must deal with similar challenges.

‘Post-provisioning dynamics’ can be represented as in Figure 1 below. The ensuing discussion follows Figure 1.

Figure 1: Post-provisioning dynamics
Overall monitoring and reviewing of the post-provisioning system. Specialists within the head office of the system are needed who examine EMIS data collected from schools from time to time to examine issues related to the distribution of staff across schools. These specialists need to understand practices and experiences in other systems, and should have a firm grasp of what kinds of policy changes are possible in the local context. They are likely to be key people from among whom the Ministry would draw if there are negotiations with teacher unions around teacher-supply matters. One way of facilitating a sufficient focus on information and knowledge would be to ensure that at least every second year a report is produced on the current post-provisioning dynamics of the system.

Maintenance of rules governing the provisioning of posts. The public schooling system is a key mechanism through which there is redistribution of wealth in the country. Tax revenue is used to pay teachers, and teachers must be distributed equitably across the country. Roughly, teachers must be distributed across schools in proportion to the number of learners. However, factors such as the grades attended by learners, subject specialisations, remoteness of schools, sizes of schools and levels of poverty in communities typically influence how teachers are distributed. Importantly, over time the distribution of learners changes, requiring a redistribution of teachers. How fast this adjustment should occur should ideally be expressed in the rules. A key matter is how prescriptive the post-provisioning rules should be, and whether they should use monetary value or people as their principal unit of analysis. Fairly non-prescriptive rules would allocate a number of posts to each school, and allow schools themselves to decide, for instance, how many language and mathematics teachers they should hire. The least prescriptive approach of all is to give each school a monetary allowance for teachers, and then to allow schools to design their own staffing makeup within this budget. It is often necessary to deviate from core rules. For instance, sudden increases in enrolments may call for exceptional measures to staff specific institutions, beyond what the core rules allow. Best is probably to include within the rules provisions for exceptional reallocations of teachers, including limitations to such action in order to combat, for instance, nepotism.
Processing of data reflecting demand for personnel at institutions. If teachers are to be distributed according to the distribution of learners, then one needs accurate data on the distribution of learners. These data would have to be as up to date as possible, though it would by necessity always be historical. For instance, the teaching posts to which each school was entitled in one year might be based on enrolment in the previous year. A key challenge is to prevent fraudulent inflation of learner numbers by schools wishing to be unfairly advantaged in terms of teacher provisioning.

Periodic renewal of post establishments for institutions. Periodically, perhaps once a year, schools must be told how many teaching posts they are entitled to. Of obvious importance to planning within the school is the knowledge that teachers are to be added or subtracted. Calculations must be made, using learner data and the current post-provisioning rules. It is also desirable to have data on the current actual distribution of teachers, so that the impact of the new post establishments, in terms of number of people who must move, can be calculated.

Communication of instructions to institutions. This communication needs to occur in such a way that schools do not consider the process unfair. Thus a school which must lose a teaching post must clearly understand why this must occur, based on equity principles. There should be a mechanism whereby schools can bring possible calculation errors to the attention of the authorities.

Moving of excess staff. This is a particularly difficult process, because it often involves getting teachers to move against their will. Above all, the process needs to be seen as fair, inasmuch as it treats teachers equally. Rules governing this process must establish a fair set of procedures for selecting who in a school should move. The rights of teachers need to be balanced against the needs of schools. For instance, from a teacher rights perspective it might be fairest to make the last teacher to join the staff to leave. However, from a school interest perspective it would be best to lose the teacher who would cause the smallest disruption to the ability of the school to deliver the curriculum.

Recruitment into vacant posts. A further set of rules deals with the hiring of staff in schools requiring additional teachers. Such staff could enter the school through a normal recruitment process, or through deployment of, in particular, excess teachers. One may establish the right of schools to refuse certain teachers, depending for instance on their subject specialisations. However, this could result in the non-allocation of excess teachers. It is perhaps useful, as a point of reference, to think of a highly decentralised system. In such a system, once teachers were made to leave a school, in other words when they were retrenched, they would become unemployed, and would have to seek employment in a school with a vacant post. Even in a highly decentralised system, there would still be a need for some central information system through which schools needing teachers could communicate their needs to excess or unemployed teachers.

Negotiations with institutions around exceptions to the rules. Schools will inevitably request the authorities for exceptional treatment based on special circumstances. Special cases must be dealt with skilfully, within parameters created by the rules. Above all, nepotism and corruption, and even perceptions of these, must be combated.
In this section the system in Namibia is discussed under the eight headings introduced in the previous section.

3.1 Overall monitoring and reviewing of the post-provisioning system

The closest thing there is to a rigorous review of the Namibian post-provisioning system currently is probably Chapter 7 of a report by Bennell, Sayed and Haihombe (2009) titled *Teacher demand, supply and utilization for primary and secondary education in Namibia*. This chapter provides a useful point of departure for identifying what should be monitored and reviewed on a periodic basis, and is therefore critiqued in this section.

Bennell *et al.* (2009) provide a number of useful analyses which ought to be repeated from time to time in some form.
Numbers of period vacancies. This analysis (p. 61), focusing on how many periods are offered in a week for specific grades and subjects and how many of those periods are not taught due to the absence of a teacher, is one not often found in developing countries, yet it seems valuable for understanding the availability and distribution of teachers. The data used for this analysis comes from the 15th School Day Survey collection. Amongst other things, the analysis demonstrates that the common wisdom at the time that mathematics and science teachers were in particularly short supply, appeared not to be supported by the school data (Bennell et al. 2009: 61). Whether this situation still prevails in 2015 is something one should explore, yet the point that widely held perceptions are often not supported by evidence is worth noting. This is often the case in education planning, and is a key reason that analysing data is so important.

Tracer study of education graduates. Data were collected from a randomly selected sample of around 1400 college and university graduates from as far back as the 1990s, and their experiences as teachers within the schooling system (Bennell et al. 2009: 17, 21, 52). These data are used extensively in the 2009 report, for instance to establish the extent to which younger teachers teach in areas of the curriculum for which they were qualified to teach. The analysis supports the widely held perception of some years back that a substantial number of teachers qualified to teach at the primary level were in fact teaching at the secondary level (p. 80). But the tracer study data also point to mismatches between a teacher’s subject specialisation and what subjects the teacher actually teaches being less of a problem than what is widely perceived to be the case. (Of course this may not hold true in 2015, and it should be noted that the sample data used concentrated on younger teachers.) This kind of data collection can be valuable, in particular if more qualitative opinion data are collected from teachers. (The basic trends, but not opinion data, can also be analysed if national identity numbers can be linked across the higher education student data and the school teacher data.)

The following post-provisioning issues and areas of analysis are not dealt with by Bennell et al. (2009), or are dealt with only to a limited degree. These can be considered issues which need to monitored from time to time so that the post-provisioning system can be understood and thus properly managed.

Effectiveness of processes which link budgets to staffing. What emerges as an absolutely crucial problem in the Namibian post-provisioning system is the lack of sufficient alignment between the budgeting process and the determination of posts per school. Essentially entitlements to teaching posts at the school are calculated according to rules which do not really consider how much money there is. Entitlements are therefore often not affordable, and become fairly meaningless. Regional authorities can simply not approve the filling of posts, declared according to the allocation rules, which are not affordable. Bennell et al. (2009) make mention of “non-budgeted posts”, but do not explore the problem in any depth. A crucial finding was that “Some schools do not have enough budgeted teaching posts to be able to meet their staffing norm entitlement” (p. 61). This points to a key flaw in the policies and processes of the system. Fixing this problem is a key challenge outlined in section 5 of this report. A related matter is how the distribution of public funds across regions, in particular insofar as personnel in education is concerned, is determined. Interviews with officials in Namibia suggested that this process is not widely understood or transparent, but that historical staffing levels are a key determinant, and that

1 Note that in the copy of the report received pages 23 to 43 and 51 to 63 are duplicated, so page references in that range within the current report could refer to two different places in Bennell et al. (2009).
somehow enrolments and even number of school-age children per region are taken into account. Clearly inequities across regions in education budgets will impact on the equity of school staffing.

**Informality in the process and equity risks.** The need for some flexibility is recognised within the Namibian system. For instance, it seems to be standard practice that 2% of teaching posts should be placed in a discretionary basket for regions to deal with unexpected needs (Bennell *et al.* 2009: 54). However, any system must guard against too much discretion, in particular discretion that serves the interests of specific groups, as opposed to advancing service delivery. There are considerable differences in the learner-teacher ratios (LTRs) of schools in Namibia which suggest, even after one has taken into account confounding factors such as school size, that there is too much informality. One can expect that to some degree the beneficiaries of this informality would be socio-economically more advantaged communities, whose links to officials in the administration may be strong (for instance because of where the children of the officials school). In this regard it is important to note that, firstly, the size of the private schooling sector is relatively small in Namibia (only around 6% of school enrolments), and the kinds of special provisions for the middle class in public schools seen in South Africa (in particular the right to charge high school fees) are not found in Namibia. This increases the risk that informal means will be used to favour public schools used by the middle class in Namibia. Clearly, simply gathering and analysing opinion data on how informality works within the post-provisioning system is important. (Examining the phenomenon using school data is discussed in section 4 herein.)

**Internal and external consistency of the post-allocation rules.** As circumstances change, post-allocation rules need to change. At the same time, change here needs to proceed cautiously, partly because unforeseen negative consequences can cause tensions between the Ministry and teacher unions. From time to time the internal consistency of the rules, and their consistency with other education policies (which of course change over time) need to be assessed. The Namibian post-provisioning rules are critiqued in some depth further on.

**Compliance with post-allocation rules.** Bennell *et al.* (2009) provide a rather basic, yet useful, compliance analysis. They rely mostly on simple LTR norms established in 2001, namely 35 learners per teacher at the primary level and 30 at the secondary level, in calculating the post entitlement per school, or the ‘prescribed’ posts per school. However, certain things are unclear in their calculation. For instance, how exactly was rounding to whole posts done? Precisely which policy documents contain the rules they applied? They also do not consider support staff. Crucially, the 2009 report makes assumptions and then calculates a number of posts per school. It then compares this to the number of teachers employed at the school according to the school survey. Of course this is a shortcut approach, but one which one must often resort to due to data limitations. Yet it should be kept in mind, and clearly acknowledged, that the assumed posts per school may differ from what schools officially understand their post entitlement to be. Moreover, it is possible that actual employees in the school officially do not occupy approved posts on the post establishment, but work at the school on some other basis. “Promotion post” availability, relative to what the rules specify, should also be examined. Bennell *et al.* (2009: 64) argue that

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2 The same observation is made by Sayin, Trkić-Izmirlja and Hough (2011: 87, 160)

3 Bennell *et al.* use the term “learner-educator (L/E) ratio”. In Namibia the term “learner-teacher ratio (LTR)” is common practice, hence “LTR” is used globally herein, also in referring to findings of Bennell *et al.* These two terms mean exactly the same thing.

4 The 2001 policy is discussed in Chung (2013: 27). There it is referred to as the “Office of the Prime Minister (OPM), Staffing Norms: Teaching Staff at Schools Public Service Management Circular No. 25 of 2001”.

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Section 3: A Critical Discussion of the Existing System
primary schools are especially under-resourced, relative to the rules, when it comes to head of department posts.

**Implicit allocation rules in relation to small schools and special school subjects.** Informal practices with regard to the allocation of school staff are likely to follow their own logic. Patterns in the data can point to what such patterns are. As has been already suggested, there could be patterns whereby middle-class schools are favoured. If so, the key question is to what degree. A further key question would be the extent to which the under-staffing of poorer schools is the result of certain schools being favoured by the administration with respect to posts, and the extent to which this is due to teachers favouring schools with easy-to-teach learners, often in urban centres, when applying for posts. It is moreover important to understand how administrators respond to the exceptional needs of small schools wanting to reduce multi-grade teaching, in a context where the rules have not explicitly dealt with this need. It seems as if a widely held belief is that multi-grade teaching should be limited to Grades 2 and 3 only (Bennell et al. 2009: 83). This is likely to influence the way in which small schools are staffed.

**The shape and size of staffing inequities.** A crucial piece of data analysis in the monitoring of post provisioning is to establish the degree of staffing inequity across schools, keeping in mind that structural issues such as the size of the school and the level of the school influence need. As a minimum, school census data are required for such an analysis, but ideally payroll data should also be used, partly so that staffing inequities can be translated to public spending inequities. A special challenge in Namibia is that downloads (‘dumps’) of the payroll data, with individual employee records, have apparently never been used for monitoring in the education sector. This is a key lost opportunity. Bennell et al. (2009) provide a part of the picture, using just school census data. However, a crucial gap is that they do not take into account dynamics around multi-grade teaching in very small schools. Certain dimensions are particularly important when analysing staffing inequities across schools: regions, the remoteness of a school, and the socio-economic status of school communities. The latter dimension seems not to have received much attention in Namibia, partly because there is no official classification of schools in accordance with levels of poverty. Spatial analysis is important. This should encompass spatial analysis of school services by grade. For instance, a key indicator could be the average distance from each school offering Grade 1, of the closest school offering Grade 12. Such patterns are important for gauging the kinds of changes that must occur in future in the distribution of teaching staff, or school hostel staff. One confounding factor that needs to be taken into account in Namibia is that in certain regions double shifting of schools, using the same school staff, has been very common (p. 61).\(^5\)

**Overall implications of misallocations.** A key table in Bennell et al. (2009: 57) is one which summarises under- and over-staffing in schools. However, the analysis stops short at examining the magnitude of the reallocation that would have to occur if under-staffed schools were to absorb teachers from over-staffed schools. This is obviously important for decision-makers to know, for instance for the purposes of negotiations with teacher unions. As an example, figures from the 2009 report can be used to establish that 218 combined primary teachers should be moved to under-staffed schools if one wanted to eliminate under-staffing. This comes to 3% of teachers working in combined primary schools. The levels seem similar in other types of schools. Hence around 3% of teachers would need to be moved in order to ensure minimum compliance with the

\(^5\) The two regions Caprivi and Kavango are mentioned. Judging from the 2012 statistical yearbook of the Ministry, double-shifting is not a matter that EMIS has focused on.
allocation rules (at least the rules as interpreted by the authors of the 2009 report). This is not an unmanageably high number. Of course the calculation referred to here is somewhat crude insofar as it does not consider matters such as the suitability of moved teachers for the receiving schools, or the willingness of the teachers to move.

Cost implications of any changes needed. Policy analysis often ends up having no impact because financial costs are not sufficiently clear. Decision-makers obviously need to understand the budgetary implications (savings and additional spending) of any recommendations made. One reason for the current difficulty of costing any staffing changes is that spending patterns seen in the payroll data are not clear, because the payroll microdata are not used for monitoring purposes.

Locating the monitoring work within the Ministry. To some extent, the analysis needs described above are addressed in the analyses appearing in section 4 of this report. But clearly a lot of work must be done to ensure that the capacity and systems required for proper oversight of post provisioning is in place in the Ministry. Importantly, Bennell et al. (2009) refer to the need for an annual “teacher staffing and teacher education report”. Perhaps initially such a report could be produced every second year. The need for this type of critical work seems to be clear amongst Ministry officials, and its location within the Planning and Development Directorate also seems clear. What is lacking are skilled analysts. This is not just a problem in the area of human resources management; it is a serious problem across the whole Ministry. The solution must be a mix of capacity building within the Ministry and the placement of new, already highly skilled analysts within the organisation. Perhaps partner organisations such as UNICEF could assist here by focusing more strongly on longer-term positioning of experienced analysts within the Ministry, linked to clear mentoring plans.

Robustness of information systems. How robust are the existing information systems for the type of monitoring outlined above? Problems relating to the non-use of (and non-access to) payroll downloads have been discussed. School census data seem relatively good, though each data collection cycle takes too long. Bennell et al. (2009: 81) indicate that the individual teacher data collected from schools each year, as part of the Annual Education Census (AEC), should be expanded to include the precise qualifications and subject specialisations of each teacher. An examination of the 2013 teacher questionnaire within the AEC pack indicates that this change has taken effect. The 2013 questionnaire captures qualification details, plus details for up to 12 subjects taught, including grades taught and up to what level the teacher studied the subject.

One important variable in the AEC does appear to be poorly captured (judging from what could be seen in the 2012 dataset). This is the employee-level variable describing the appointment type of the employee. According to the 2012 data, only 0.5% of teachers in public schools were employed on a temporary basis, yet interviews with officials in regional offices pointed to much higher figures of at least 10% in most, and possibly all, regions. As discussed further on, temporary appointments are an important and complex matter in the staffing of schools, and reliable numbers are essential. It is believed that all or most temporary teachers do appear within the national payroll system, but whether this is the case, and whether appointment type is accurately reflected in the payroll system, could not be confirmed as it was not possible to gain

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6 In early 2015, the capturing of the main 2014 AEC data was stalled due to procurement problems. The 2013 school census had also not been finalised.

7 What the questionnaire does not cover, however, is details on subjects that the teacher may be qualified to teach, but which the teacher is not teaching in the current year.
access to the payroll microdata. Not having reliable data on the numbers of temporary teachers across the whole country represents a serious risk for planners in the Ministry of Education.

One relatively simple task that should be undertaken is to update the Ministry’s dataset of school geo-coordinates by incorporating the location of schools opened in recent years. It appears as if the coordinates currently available are those existing in around 2004.

A third potential source of data for planners, apart from the school survey and payroll data, would be data derived from an operational human resources system. Currently, an elaborate paper-based system exists to manage matters such as leave, transfers across schools, and evidence supporting a change in a teacher’s salary notch. A key element of this system is the employee file, which for school-based staff is currently housed in the regional office. Namibia has come relatively far in introducing an electronic human resources management system for the public service as a whole. This system is known as the Human Capital Management System. It has been implemented in a number of sectors outside education. Staff in the Office of the Prime Minister working on the system report that it will eventually be implemented in education, and will include school staff.

3.2 Maintenance of rules governing the provisioning of posts

A reliable source in the Ministry reported that despite a number of alternative proposals formulated over several years, norms from 2001 and 2002 still apply. These norms essentially reiterate the 2001 policy referred to above, the emphasis being on a learner-teacher ratio of 35 for the primary grades and 30 for the secondary grades. Yet some officials, including officials in regional offices, were under the impression that more recent rules could be used. What is clear is that in 2006 and again in 2013, interesting sets of post-provisioning norms were developed by the Ministry. These are discussed further on.

The 2006 set of rules is rather comprehensive and clearly stated. However, they base post entitlements on enrolments in a manner which does not cater for the special needs of small schools. They include rules around the provisioning of head of department posts and secretaries within schools. The 2006 rules in fact do include a clear provision for adjusting ideal numbers of posts per school downward, in line with budget availability. The downward adjustment would be national, so at least in theory the 2006 rules ensure a nationally equitable system of post entitlements. This kind of equity is probably what Namibia ought to pursue. However, to date it appears that no formal procedure has been implemented to ensure that post entitlements are kept

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8 The exact reasons for this were not clear, but it seems likely that security and privacy concerns played an important role. Such concerns are understandable, but well-functioning public institutions establish specific protocols for accessing sensitive data, such as payroll data. Such protocols can vary from a signed agreement that the analyst will use the data for the intended purpose, and will then destroy the copy of the data, to the use of the data on a specific computer of the institution, from which the analyst cannot draw a copy of the data. The problem in Namibia is largely that such protocols do not appear to exist.

9 The circulars were referred to as “Ed Circular 13 of 2001” and “F Ed Circular 12 of 2002”. (The latter circular is sometimes incorrectly referred to as Circular 2, it was reported.)

10 The 2006 Public Service Commission circular titled “Organisation and establishment: Staffing norms: Teaching staff at schools”.

11 The formula for secretary posts seems remarkably generous. Even a one-teacher school would receive a secretary, and a school with 700 learners would have two secretaries. The maximum possible is four secretaries.
within budget. Hence interviewees at the Ministry of Education head office, during the January 2015 consultations, referred to the misalignment between budgets and posts as a longstanding and serious problem. Officials at the regional offices who were interviewed clearly devoted much effort towards overcoming the posts-budgets misalignment in the policy, in ways discussed further on.

A 2013 set of proposed rules produced by the Ministry is clearly aimed at increasing the number of posts per school in general.12 One way that this was to be achieved was attaching additional teaching posts to specific subjects. One such subject is Life Skills. Other subjects are “ICT Literacy” and secondary school subjects offered on the “higher level” (a more advanced level). These latter subjects are likely to be offered in more advantaged schools, so difficult equity considerations are at play (e.g. ICT Literacy teachers would be given only to schools with computers). Similarly, provisions giving librarian posts to schools with libraries could be problematic from an equity perspective. The 2013 proposed rules examined have no provisions for dealing with multi-grade teaching in small schools, though officials interviewed indicated that work was proceeding on the formulation of such provisions.

Interviews with officials in regional offices indicated that there are differing understandings across regions around what the official post-provisioning rules are. However, it also appears that regional officials use existing rules, whether official or proposed, selectively in order to deal as best as they can with what they see as the needs of schools.13 In addition, certain regions develop their own rules. For instance, in one region the actual sizes of classes within a school were used as a criterion for determining the need for additional posts.

Bennell et al. (2009: 25) bring to the fore one issue which ought to be formalised within the rules. A total of around 320 publicly paid teaching posts were said to exist within private schools. There were also privately paid teachers, receiving exceptionally low salaries funded by parents, in public schools which struggle to fill publicly funded posts (p. 65). Bennell et al. (2009: 82) also report that there is widespread support for reversing the status quo and making the ideal learner-teacher ratio in primary schools lower than in secondary schools – so the 35 and 30 ratios would be swapped.

What one can conclude regarding post-allocation rules is that there is a clear need for rules which link post provisioning to budgets. One can also conclude that considerable thought and work has gone into the formulation of new post-provisioning rules, even if they have not been approved. Getting the formula right when it comes to limiting multi-grade teaching is clearly still a challenge. There is probably a need for a firmer grasp of how one balances need and equity imperatives when norms are drawn up. Better school facilities do create higher levels of staffing needs, yet the State should ensure that the poor are prioritised. What none of the norms examined display is a good grasp of the need to maintain stability. Within a simple formula, small fluctuations in learner numbers (in fact an increase or decrease of just one learner) can result in the complex matter of moving a teacher from one school to another. Ideally, one would only want to move people if enrolment trends are sustained. There are ways of building this into the rules, for instance through the implementation of lags in the subtraction of ‘excess teachers’. Better ways probably need to be devised for the process of establishing the post-provisioning rules. It appears as if the task is considered a technical one best left to one or a few experts. Whilst the task is technically complex, and expertise is required, it is also important to test assumptions

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12 Circular of the Ministry dated 12 July 2013 and titled “Staffing norms for Namibian schools”.
13 However, in the regions visited, it appeared that the 2006 proposals were not used at all.
with key stakeholders, for whom the implications of any rules need to be made very clear. In particular, a reference group of school principals, from a variety of school types, should be used to discuss the compatibility of any proposed rules with effective school management.

3.3 Processing of data reflecting demand for personnel at institutions

The practice here seems curious in the case of Namibia. Schools themselves, specifically school principals, are asked to calculate their post entitlements at the start of each year, on the basis of their 15th School Day Survey learner numbers. Inspectors then check that the calculation has been correctly performed by the principal. This practice is curious insofar as one might expect the administration to insist on doing the calculation in the first place to ensure that it is done correctly, and then to allow schools to query the administration’s calculations.  

Officials interviewed in regions and at the national offices were in many instances concerned that the administrative controls to prevent fraudulent inflation of learner numbers by schools were weak. One official suspected that as many as 20% of schools were inflating their learner numbers to secure more teachers, or to prevent existing ones from leaving. In one region, Omaheke, a robust system for counteracting fraudulent enrolment numbers, involving physical headcounts in schools, seemed to be in place. What seems lacking is a national policy, based on best practices, on when and how regions should verify learner numbers. In fact, given the risk that whole regions might inflate learner numbers to attract a larger share of the national budget, the national level should occasionally verify the regions’ verification processes.

The Ministry in Windhoek has on a few occasions attempted to independently calculate the post entitlements of each school for its own analytical purposes. This was last done in around 2007. The Ministry used its last analysis to confirm that post entitlements at schools were in fact unaffordable, meaning the cost of filling all calculated posts exceeded the budget by a large margin.

3.4 Periodic renewal of post establishments for institutions

As indicated above, every year regions and schools work together on converting enrolment data to post entitlements, using policies and criteria which differ from region to region. If the calculation done for each school reveals that the number of posts should change, then the entitlement is considered to have changed, with immediate effect. There appear to be no provisions to phase in post-establishment changes over some years.

3.5 Communication of instructions to institutions

It is generally accepted, by schools and regional officials, that post entitlements are fairly theoretical, and that adjustments must be made so that the region can remain within its budget. There appear to be two kinds of adjustments. A widely used practice is to convert posts for fully

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14 This supposedly more efficient approach was followed in one of the six regions visited.
qualified and permanent teachers from the original entitlement to posts for less costly and not necessarily qualified temporary teachers. This is one way of ensuring that schools get the number of teachers to which they are entitled according to whatever rules are used, even if the qualifications of the teacher are not ideal. The second type of adjustment, apparently used to a lesser degree, is simply to ‘freeze’ posts, in other words instruct schools to make do with fewer teachers because there are no funds to fill certain empty posts.

The final decisions with regard to individual schools often depend on who takes the decisions in the regional office. This informality of course raises the possibility of unfairness. For instance, a school’s physical proximity to the regional office may make it easier for the school principal to insist on a specific solution which suits the school. Informality can also facilitate nepotism and corruption. The interviewers who spoke to regional officials did not detect any obvious signs of corruption or even unfairness. On the contrary, the general impression was that officials were committed to a fair treatment of schools. However, it is impossible to draw firm conclusions in this regard solely on the basis of the region-level interviews. Officials interviewed at the Ministry in Windhoek felt that irregularities in the granting of approved posts were not a serious problem. Instead, they felt that what was a serious problem were irregularities with respect to the filling of approved posts, whether permanent or temporary. This is discussed further on.

Though there is a general misalignment between budgeting and post provisioning, when regions must justify their budget need to the national level during the annual budgeting cycle, teacher spending needs are expressed in terms of numbers of permanently employed teachers. However, these numbers are largely based on historical spending patterns, rather than on need as calculated by the post-provisioning formula used by the region. Moreover, it is widely understood that the official amount of funding available for teachers will not meet the demands created by the post-provisioning formula used. Importantly, the official budget of each region as seen in Windhoek is expressed only in terms of permanent teachers, not temporary teachers. Permanent teachers on paper within the budget may in actual fact represent spending on a greater number of lower-cost temporary teachers within the schools of the region.

### 3.6 Moving of excess staff

Moving school staff out of schools where the existing staff exceeds the number of calculated posts is difficult, partly because the ‘de facto rights’ of the teachers concerned are strong, so those who do not want to move can turn not just to labour laws, but also union pressure, to ensure that they are not moved (Bennell et al. 2009: 61). The result is a situation where a considerable number of excess teachers remain behind in their original schools. Perhaps 4% of all teachers fall into this category. A part of the problem is that existing incentives designed to attract teachers to remote schools are considered not large enough to encourage excess teachers in non-remote schools to relocate to remote schools.

Ministry officials in Windhoek seemed more concerned than regional officials about the need to move excess teachers. This is perhaps because the regional officials are closer to the teachers in question and may want to avoid the conflict accompanying the movement of excess teachers. Regional officials argued that growth in enrolments, combined with a general under-supply of qualified teachers, resulted in a situation where it was rare to find a need to move qualified teachers.

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15 Calculated on the basis of figures seen in Bennell et al. (2009: 57).
permanently employed teachers out of schools. This perception seems to be at odds with the fact that learner-teacher ratios had been declining, at least at levels below the upper secondary level, during the years up to 2007, and beyond.  

3.7 Recruitment into vacant posts

Bennell et al. (2009: 61) estimate that vacant teaching posts come to around 4% of employed teachers. This seems relatively high. In South Africa the corresponding figure is around 1.0%. This is not surprising if one considers that many vacant posts would be unaffordable in the case of Namibia, and that attempts to appoint permanent people would thus often be stopped.

Vacant posts, where they may be filled, are meant to be filled through a clearly specified process involving advertisements, an interview, and the involvement of the School Board (which includes parent representatives) in deciding who occupies a post. However, Ministry officials at the national level have recently been alarmed by reports indicating that irregular processes are far more common than what was presumed. Specifically, the advertising of posts does not always occur, and appointments without any interviewing process are common enough to warrant special concern, according to Ministry officials. These irregularities are believed to point to nepotism and possibly other forms of corruption at a local level.

There seems to be an ‘information asymmetry’ problem when it comes to the advertising of posts. Whilst there is a once-a-year process, occurring near the start of the year, which leads to advertisements in a Government Gazette, there is also much advertising happening at other points in the year, on a far more local level, for instance through circulars issued by the regional office. Bennell et al. (2009: 77) argue that there should be more national advertising of posts to reduce the risk that good potential candidates remain ignorant of posts that they may find interesting.

An ongoing concern has been the fact that qualified teachers have been appointed to posts even if they do not meet the specified subject specialisation requirements. This is of course a complex matter as it may be difficult to find teachers with the right subject specialisations willing to teach in a specific school, and a teacher with the wrong specialisations is mostly better than no teacher at all. Compounding this mismatch problem is the fact that subject combinations allowed at the teacher training institutions are often not the combinations required by schools, and are not in line with the school curriculum and the general logic of timetabling.

The interviews with officials in the regions suggested that two factors reinforce each other in an unexpected and arguably perverse way. Entitlements to permanent fully qualified teachers are not completely affordable. Had there been an over-supply of such teachers in the labour market, tensions would have been caused by the fact that posts were promised, but then ‘frozen’, when unemployed potential candidates existed. However, a general under-supply problem seems to exist with respect to qualified teachers. Thus qualified teachers are generally absorbed into the system, leaving the region with unfilled high-cost posts which can be converted to lower-cost temporary positions. Thus, one way of looking at the dynamics at the regional level is to conclude

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16 See the discussion in section 4.
17 As yet unpublished South Africa government report titled “Second detailed indicator report for basic education sector”.

14 Human Resources Development Plan for the Namibian Basic Education Sector: Post Provisioning
that an under-supply of qualified teachers has made it possible to continue with a complex and somewhat illogical post-provisioning system.

Where a qualified teacher cannot be found to fill a vacant post at a school, the best-case scenario is for the region to allow the school to employ a temporary teacher, who need not be fully qualified, generally on a one-year contract, and for the best available person to become this temporary teacher. What is not clear is the extent to which regions employ more temporary teachers, relative to the planned number of fully qualified teachers, thus in a sense compensating for the quality of the teacher with smaller classes. This might explain some of the decline in the learner-teacher ratio at the primary level, from around 34 in 2000 to 29 in 2012.18

What is clear, however, is that the appointment of temporary teachers often results in tensions between the regional office and schools, and probably sub-optimal service delivery. In fact, these tensions also arise over the choice of teachers into permanent posts. The School Board and regional officials will often disagree on who should occupy a post. Regional officials argue that schools will too often prioritise the employment of a local member of the community, as opposed to the best candidate for the job. Regional officials confirmed that some temporary teachers are appointed without there having been an interview, or in the absence of all the required steps. Regions may override the appointment decision of the school, which can then prompt formal objections from the School Board which are sometimes not resolved until a final decision is taken in Windhoek. It should be stressed that the schools’ point of view on the problem could not be explored during the visits to regions as no school principals or School Board members were interviewed. It is not impossible that to some degree regional officials are inflexible and do not sufficiently appreciate the needs of individual schools.

The process of hiring temporary teachers where fully qualified teachers cannot be found is made difficult by insufficient information on current financial commitments. Several regional officials complained that it was difficult to assess when the hiring of additional temporary teachers was affordable because they were unable to gauge what remained of the personnel budget at a particular point in the financial year, and how existing commitments might play themselves out during the remainder of the year. The first problem should be relatively easy to resolve. Officials require better real-time data on personnel spending to date. For the second problem, part of the solution would be better spending projection skills amongst the officials.

3.8 Negotiations with institutions around exceptions to the rules

As indicated in the preceding discussion, the post-provisioning system in Namibia is in many ways designed to be rather unsystematic. The staffing of schools is determined to a large degree by the decisions of regional officials and the lobbying of the School Board of each school. In some instances, the decisions of officials are simply imposed on schools. In other instances there is interaction between the school and the regional officials to identify optimal solutions within budget constraints. As emphasised above, the fact that new information was not gathered directly from schools means that there is not much certainty around how schools experience the post-provisioning process.

18 See section 4 and Bennell et al. (2009: 55).
Section 4
Patterns Seen in the Data

Certain patterns in the school data are particularly relevant for understanding how post-provisioning actually works, and what the largest challenges would be going forward. This section presents an analysis of selected variables from the 2012 Annual Education Census in order to throw light on key school-staffing dynamics.

As an introduction, Figure 2 shows the distribution of school enrolments by level (primary and secondary) and region (using the 13 regions that existed in 2012, i.e. Kavango as a single region). What is clear is the concentration of enrolments in the far north, and in the centre.

Three main grade configurations. The structure of schools, in terms of grades offered, is a key factor influencing the type and number of teachers needed per school. Table 1 shows that 39% of learners are in schools which offer Grades 1 to 7, and no grade beyond Grade 7. The next most common grade configuration, in terms of learners covered, is Grades 1 to 10, which accounts for 31% of all enrolments. In each of the first two categories of schools, the percentage of learners in schools providing pre-primary education is around 60%. The third-largest category, accounting for 14% of enrolments, is schools offering Grades 8 to 12, so ‘pure’ secondary schools. Thus a little over half of all learners are either in ‘pure’ primary schools (Grades 1-7) or ‘pure’ secondary schools. Importantly, 98% of all learners are in schools starting with either Grade 1 or Grade 8 – here a school with pre-primary would be considered to start with Grade 1. Nearly all of the remaining 2% of learners are in schools which start with Grade 5. The specifics of the Namibian system appear to beg a couple of questions, which maps further on attempt to answer. Firstly, to what extent is there a vacuum in local areas with respect to grades beyond Grade 1, up to Grade 7. For instance, how common is it for the system to ‘abandon’ learners after, say, Grade 4, simply because there are no accessible schools offering schooling beyond that grade? This has implications for future expansion, and the kinds of post-provisioning scenarios required in future years. Secondly, to what extent does a lack of proximity to secondary schooling affect the opportunities of children in specific geographic areas?
Table 1: Distribution of learners across school grade configurations (2012)

<table>
<thead>
<tr>
<th>Minimum grade</th>
<th>Maximum grade</th>
<th>Percentage of learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>39</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Other combinations</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Note: Only data from public schools are considered in this analysis.

Data for the production of school maps are relatively good in Namibia, but they could be better. Geo-coordinates were obtainable for 92% of public schools found in the 2012 schools dataset. For five regions the figure was over 95%. For four regions it was less than 90%: Khomas (83%), Kunene (85%), Oshikoto (84%) and Otjozondjupa (75%).

Figure 3: Schools by grade configuration (2012)

Note: School types listed lower down in the legend list have points appearing on top of the points of school types appearing higher up in the list. So, for instance, a “1 to 8/9/10/11” school near a “1 to 2/3” school often obscures the latter school. This is a problem inherent in point maps, a problem which, in most of the maps in this report, is largely resolved with the use of honeycomb cells. “Grade 12” points refer to any schools offering Grade 12. The category “>1 and <12” refers to schools which start at a grade above Grade 1 and end at a grade below Grade 12.
Limited geographical distribution of schools with Grade 12. It is clear from Figure 3 that access to the full cycle of schooling, up to Grade 12, is made difficult due to the geographical inaccessibility of schools offering Grade 12 for many school communities. In the public school system, only 9% of schools offer Grade 12. To illustrate the problem, in Omaheke only 3 of 34 schools offer Grade 12 and from the map it is clear that for large parts of this region, a school with Grade 12 would be over 100 km away from a primary school.

Some limitations in the geographical accessibility of Grade 7. Perhaps more seriously, it is clear that for many learners, even reaching Grade 7 is made difficult due to geographical remoteness. In the northern regions it is common for schools to offer only Grades 1 to 4, with there being no close proximity of a school offering a grade beyond Grade 4. A better view of this problem can be seen in Figure 4, which zooms in on the north of the country. Here it is clear that a particularly serious access problem exists in Kavango, with Grade 12 being relatively inaccessible, and even Grade 7. Remoter parts of Omusati also experience these problems.

Figure 5 confirms that in many parts of the country, there are considerable distances between the school where a child does Grade 1, and the closest school offering Grade 7. For 45% of Grade 1 learners, Grade 7 is offered in the same school. For a further 44% of Grade 1 learners, Grade 7 is offered at another school, but one within 2 km of the present school. A straight-line distance of 2 km can roughly be considered a reasonable threshold which would allow a learner a relatively easy transition to another school, without high transport costs. For 11% of Grade 1 learners the distance to the other school exceeds 2 km, and for 2% it exceeds 5 km. Thus the problem is not very big in terms of the numbers of learners involved. However, providing sufficient access just up to Grade 7 would require extending the grades covered in many schools.

19 Of course the critical statistic for learners is the distance between the home and school, but because we do not have data on where every learner lives, distances between schools provide an approximate sense of the distance a learner would need to travel each day if he relocated from one school to another. Learners living in between two schools would of course travel less than x kilometres, this being the distance between the schools, regardless of which school they attend. However, learners not living between the schools would in general travel more than x kilometres if they move from one school to another.
Figure 5: **Distance Grade 1 to nearest Grade 7 (2012)**

Figure 6 repeats the analysis of Figure 5, but this time with a focus on the accessibility of a public school offering Grade 12. For 74% of Grade 1 learners, the distance to the closest Grade 12 class exceeds 2 km. For 36% it exceeds 5 km and for 6% it exceeds 30 km.

Figure 6: **Distance Grade 1 to nearest Grade 12 (2012)**

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**Note:** Each cell (hexagon) is on average 31 kilometres across. The cell colouring represents the distances experienced by the average Grade 1 learner within the cell. A value of 0 km indicates that all Grade 1 learners within a cell find themselves in schools which also offer Grade 7.
A multi-grade teaching threshold of 25 learners in a grade. The analysis now moves from looking just at learners to looking at learners and teachers. The picture seen in Figure 7 is important as it indicates at what point, in terms of the average grade group size, schools are implicitly told that they must do multi-grade teaching. The average grade group size is the total enrolment of the school divided by the number of grades offered. If one concentrates on schools offering any primary level grades (Grades 1 to 7), then one sees that very small schools with an average grade group size of 5 experience a situation where, on average, a teacher must teach 2.3 grades. The value 2.3 is obtained by, in each school, dividing the number of grades by the number of teachers. The average ratio across all schools in the size category is then found, where the size category is determined by the average grade group size rounded to the nearest multiple of 5. The important thing is that it is only when primary schools reach an average grade group size of 25 that they reach a point where there is at least one teacher per grade, a situation clearly needed if avoidance of multi-grade teaching is to be a possibility – see the arrow in the graph.

Figure 7: Multi-grade teaching thresholds in 2012

Source: 2012 EMIS data.

Note: This graph uses data from 1191 public schools, 1175 of which have some primary grades (Grades 1 to 7) and 402 of which have some secondary grades (Grades 8 to 12). Had the horizontal axis extended beyond 60, all 1618 public schools in the dataset would have been included. “Grades taught per teacher” (vertical axis) uses all grades in the school in the range Pre-primary to Grade 12, divided by the number of teachers working in the school. Pre-primary was counted as one grade.

A multi-grade teaching situation slightly better than that of South Africa. Figure 8 compares the “Grades per teacher (primary)” curve in Figure 7 to comparable curves from South Africa and the Brazilian state of Minas Gerais (the second-most populous of Brazil’s 26 states). The multi-grade threshold in Namibia is similar, and slightly better, than the one seen in South Africa. In South Africa, on average schools must wait until they reach a grade group size of 30 before they are able to abandon multi-grade teaching (whereas the Namibian threshold is 25 learners). In the Brazilian state analysed, the situation is considerably better than in South Africa and Namibia. Here, on average, once a school has reached an average grade group size of around 15, multi-grade teaching is no longer necessary.
Further analysis of the data reveals that 5% of learners in Namibia are in schools where some multi-grade teaching is likely to occur (in the sense that there are more grades than teachers). This is not very different to the situation in South Africa.

**Similarities with South Africa at whole-school level.** The use of the overall enrolment of a school as a basis for allocating teachers is, it has been seen, common in Namibia. For this reason, an analysis as in Figure 9 is informative. What it shows is, firstly, that overall enrolment does to a large degree determine how many teachers a school has, and the relationship is largely a linear one. The graph provides an idea of the enrolment thresholds used to place additional teachers in a school. Namibia’s system is more consistent than South Africa’s in the sense that the curves for the 10th and 90th percentiles are closer together. There is thus, for instance, a smaller range of enrolment numbers for schools with 10 teachers in Namibia, relative to South Africa. Moreover, the patterns for small schools are similar across the two countries. One thing that stands out in Namibia is that on average the threshold used for allocating the fourth teacher is relatively generous – see the kink in Namibia’s “p90” curve at the point of the fourth teacher.

**Figure 9: Range of total enrolment by number of teachers**

Sources: As for Figure 8 (with respect to Namibia and South Africa), but with all schools, including larger schools, included.

Note: The treatment of Pre-primary in the case of Namibia was as for Figure 7.
A clear favouring of small schools in the existing Namibian system. Do the Namibian teacher-allocation practices favour smaller schools? Answering this question is less straightforward than one might think. The learner-teacher ratio (LTR) is a difficult indicator to interpret in this regard, because of two confounding factors. Firstly, the LTR in one-teacher schools will always be exceptionally low simply because one cannot allocate a fraction of a teacher to a school. This practical fact cannot be considered as a favouring of smaller schools. Secondly, amongst schools with more than one teacher, one can expect the LTRs to be higher in smaller schools than in larger ones, even where the same rules are applied to all of the schools, simply because, when one divides learners by a rule-based threshold, the remainder will be greater for smaller schools, as a proportion of total enrolment. One way of testing whether the system really does favour smaller schools is to simulate a provisioning of teachers to schools, using a standard rule, and then to adjust the rule until the gap between actual and simulated teacher numbers per school is minimised. Such an exercise resulted in the graph presented as Figure 10. If one tests the Namibia data, it appears that schools receive their second teacher when the school has 26 learners – so there would be a learner for every 13 learners, hence the height is 13 for the first Namibia bar in Figure 10. It also appears as if schools receive a third teacher after the school gains an additional 18 learners, and a fourth teacher after the school gains a further 23 learners. Thereafter, each multiple of 28 learners provides the school with an additional teacher. The model suggests that Namibia does in fact favour smaller schools, and that Namibia's favouring of smaller schools is at least as great as South Africa's. (The latter comparison would depend partly on whether one focuses on absolute numbers or proportions.)

Figure 10: Learner-teacher thresholds for small schools

Sources: As for Figure 8 with respect to South Africa and Namibia, but in this case with all schools included – i.e. including larger schools too.

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20 This explanation can be illustrated through an example. One can imagine a system not favouring smaller schools, where one teacher is allocated for every 25 learners. A school with 50 plus 10 learners will have an LTR of 30 (60 learners, 2 teachers). On the other hand, a school with 500 plus 10 learners will have an LTR of 25.5 (510 learners, 20 teachers). The LTR in the smaller school is considerably higher than that in the larger school, although the same rule is being applied to all schools, and the remainder for the two schools is the same, i.e. 10 learners.

21 In Excel terms, the simulated number of teachers per school was determined as follows:

\[ \text{Number of teachers} = \text{IF}(L >= T2, \text{IF}(L >= T3, \text{IF}(L >= T4, \text{IF}(L >= T5, 4 + \text{ROUNDDOWN}((L - T5)/P5), 3), 2), 1)) \]

Here \( L \) is learners per school and \( T2 \) to \( T5 \) are the enrolment thresholds which qualify the school for the 2\(^{nd} \), 3\(^{rd} \), 4\(^{th} \) and 5\(^{th} \) teachers.

Moreover the five values in the graph have the following meaning: \( P2 = T2/2 \); \( P3 = T3 - T2 \); \( P4 = T4 - T3 \); \( P5 = T5 - T4 \). They are moreover calculated as follows: \( P4 = P5 - Z \); \( P3 = P4 - Z \); \( P2 = P3 - Z \).

In finding a solution, the values \( P5 \) and \( Z \) are adjusted until the difference between the actual and simulated teacher numbers per school is minimised. The sum of the squares of the differences between actual and simulated teacher numbers per school is what is minimised in this process.
Simulating staffing practices through a regression model. As discussed in Section 3, the distribution of teachers across schools is less rule-based than it ought to be, largely because the post-provisioning system tends to declare teacher posts in excess of what is affordable, meaning relatively ad hoc decisions must then be taken to keep staffing within the constraints of the budget. However, even ad hoc decisions are likely to be aligned with explicit or implicit rules. This was seen in the simulation analysis described in the previous paragraph. A further and separate attempt was made to understand what those rules might look like, by using a regression model to predict the actual number of teachers per school, on the basis of the enrolment and grades offered. The outputs of the regression model are presented in Table 2 below. The model was able to predict 94% of the variation in teacher numbers across schools – see the adjusted $R^2$ value. Therefore, despite the problems with the rules, there is a rather high degree of uniformity in the way that schools are staffed. Of course, non-compliance with rules would not be the only reason for variation in the number of teachers, relative to explanatory factors. A key additional reason would be difficulties in finding teachers to fill positions, even affordable positions, in schools.

Table 2: Regression outputs for teacher prediction model

<table>
<thead>
<tr>
<th>DEPENDENT VARIABLE: TEACHERS</th>
<th>Coefficient</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolment*</td>
<td>0.0291</td>
<td>364</td>
</tr>
<tr>
<td>Has Pre-Primary</td>
<td>0.721</td>
<td></td>
</tr>
<tr>
<td>Has Grades 1 to 4</td>
<td>-1.639</td>
<td>0.83</td>
</tr>
<tr>
<td>Has Grades 5 to 7</td>
<td>1.400</td>
<td>0.65</td>
</tr>
<tr>
<td>Has Grades 8 to 10</td>
<td>2.688</td>
<td>0.37</td>
</tr>
<tr>
<td>Has Grades 11 to 12</td>
<td>2.506</td>
<td>0.09</td>
</tr>
<tr>
<td>Constant</td>
<td>2.599</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Observations 1 618
Adjusted R squared 0.942

The regression outputs were used to calculate how many teachers each school would have if the same criteria were applied to every school, using for each school the six explanatory variables seen in Table 2. The resultant teachers per school were then considered the ‘simulated’ allocation of teaching posts. At this stage of the calculation, fractions of teachers were permitted. Learners were divided by teachers in order to establish what the LTR in the simulated scenario, which we can consider an equitable scenario, would be. Even within an equitable scenario one would not expect the LTR to be exactly the same in each school. Small schools would tend to enjoy lower LTRs to reduce the need for multi-grade teaching, but also because one cannot allocate less than one teacher per school. Moreover, it is generally accepted that due to subject choices existing at the secondary level, the LTR needs to be lower in schools offering Grades 8 to 12.

The simulated number of teachers per school had to be adjusted so that only whole numbers of teachers were attached to schools. However, this had to be done in such a manner that the total number of teachers came to 22929, the actual total number of teachers. Each school’s simulated number of teachers was rounded up to the nearest integer. This resulted in a total number of simulated teachers which exceeded 22929. Teachers per school were then adjusted downwards.
until the simulated total reached 22,929. The downward adjustment occurred in such a manner that each school’s pre-rounded teacher figure remained a constant proportion of total simulated teachers.

**Proximity of actual LTRs to the 2001 LTR norms.** Table 3 displays the LTRs for common grade configurations and different school sizes, using both the actual LTR and the simulated LTR arising from the calculations described above. The differences between the actual and simulated values are not large, as was expected given that the simulated number of teachers is calculated not according to an actual policy (which could diverge to a large degree from actual practices), but rather according to a theoretical policy based on what administrators actually do. As can be seen, actual practices do roughly follow the 2001 norm insofar as Grades 8 to 12 secondary schools experience an LTR which is five learners below the Grades 1 to 7 primary school figure (around 25 against 29). The 2001 policy (discussed in Section 3) specified a ratio of 30 for the secondary level and 35 for the primary level. Moreover, the actual practice is to favour smaller schools, in order to reduce multi-grade teaching, a practice which is sensible, even if the policies have not always explicitly catered for this need. The bottom half of Table 3 shows that the larger the school, on average the higher the LTR, the difference in the ratio between the largest and smallest schools being around eight learners.

Table 3: **Learner-teacher ratios for different types of schools (2012)**

<table>
<thead>
<tr>
<th>Grade combination</th>
<th>ACTUAL LTR</th>
<th>SIMULATED LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 7</td>
<td>28.5</td>
<td>29.3</td>
</tr>
<tr>
<td>1 to 10</td>
<td>25.8</td>
<td>24.5</td>
</tr>
<tr>
<td>8 to 12</td>
<td>24.9</td>
<td>24.8</td>
</tr>
<tr>
<td>1 to 4</td>
<td>28.3</td>
<td>27.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total learners</th>
<th>ACTUAL LTR</th>
<th>SIMULATED LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 50</td>
<td>20.0</td>
<td>19.2</td>
</tr>
<tr>
<td>51 to 150</td>
<td>22.6</td>
<td>22.0</td>
</tr>
<tr>
<td>151 to 300</td>
<td>24.3</td>
<td>23.6</td>
</tr>
<tr>
<td>&gt;300</td>
<td>27.5</td>
<td>27.6</td>
</tr>
<tr>
<td>Overall</td>
<td>26.7</td>
<td>26.7</td>
</tr>
</tbody>
</table>

**Note:** Ratios are weighted by learners, therefore they can be thought of as the LTR experienced by the average learner. Had no weight been used, the overall ratios would have been approximately 24.5, as opposed to around 26.5. However, with no weights the disaggregated values would look less different, e.g. around 24.0 for Grades 8 to 12 (instead of 24.9). Weighted ratios are preferable as they reflect what people experience on average, whereas unweighted ratios are biased towards what happens in smaller schools.

**Continuing LTR declines at the primary level.** The LTRs in Table 3 are more or less in line with what is seen in Bennell *et al.* (2009: 55-6). That study points to an actual LTR for primary schools of 29.9 in 2007, after an annual decline during the 2000 to 2007 period of around 0.2 learners a year. Had the same decline continued to 2012, a ratio of 28.8 would have been seen in 2012, meaning the 28.5 value for Grades 1 to 7 schools seen above implies the decline accelerated slightly post-2007. The secondary-level ratios are close if one compares Bennell’s 24.6 for 2007 to the 24.9 for Grades 8 to 12 seen in Table 3.

**Inequities in the form of gaps between actual and simulated LTRs.** Figure 11 explores a crucial matter, being the question of how inequitably teachers are distributed across schools, relative to some equity standard. Here the equity standard used is the simulated scenario discussed above.
This is a very lenient standard insofar as though it creates a set of rules (essentially the coefficients from Table 2), these rules are deliberately set to be as close to the actual practice as possible. If one examined the inequity of teacher provisioning using any other set of rules, for instance a set of rules developed by the MoEAC, one is likely to see a much larger degree of inequity, in other words a much larger gap between the actual practice and the ideal.

Figure 11: Distribution of learner-teacher ratio inequities

The horizontal zero line in Figure 11 is where one would find all schools if there was complete equity in the system and one could distribute fractions of teachers to schools. There would be a zero difference between the two for all schools and learners. Because one can only distribute whole teachers to schools, there will always be some degree of inequity in the LTR, even across similarly sized schools offering the same grades. A difference of just one learner can add a teacher, pushing the LTR down. However, this inequity is minimal. The gap between the “Equity norm” curve, produced using figures after rounding, and the zero line is virtually never greater than absolute 1.0. The red “Actual” curve, produced by comparing the actual LTRs of schools to the pre-rounding simulation results, shows that the actual inequities in the distribution of teachers are considerable and worth worrying about. For instance, 8% of learners are in schools where the LTR is too high by a margin of at least 5 learners (right-hand end of the “Actual” curve). And for 5% of learners the LTR is too low by a margin of at least 5 learners. Again, it should be emphasised that this picture is the ‘least alarmist’ possible, because the standard is deliberately set so close to the actual reality.

Different ideal LTRs in different regions. To what extent would teachers have to be moved between schools, and regions, if an equitable distribution were to be achieved, given the existing overall numbers of teachers? Table 4 answers this question. The actual situation per region is shown in the left-hand panel of the table. The LTRs one would need are shown in the second panel. Clearly, equity does not mean having the same LTR across the different regions. For instance, regions with a greater concentration of small schools, such as Caprivi (now named Zambezi) and Kunene, can be expected to have lower LTRs. The high ‘ideal’ LTR for Khomas is due to the high degree of urbanisation in this region.
### Table 4: Simulation of equity-enhancing teacher movements

<table>
<thead>
<tr>
<th>Region</th>
<th>Teachers (actual)</th>
<th>Learners (actual)</th>
<th>LTR (actual)</th>
<th>Teachers (simulation)</th>
<th>Learners (simulation)</th>
<th>LTR (simulation)</th>
<th>Across-region movement</th>
<th>% of total</th>
<th>Within-region movement</th>
<th>% of total</th>
<th>All movement</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprivi</td>
<td>1,334</td>
<td>28,779</td>
<td>22</td>
<td>1,241</td>
<td>23</td>
<td>-93</td>
<td>7</td>
<td>35</td>
<td>3</td>
<td>82</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Erongo</td>
<td>1,098</td>
<td>29,813</td>
<td>27</td>
<td>1,078</td>
<td>28</td>
<td>-20</td>
<td>2</td>
<td>40</td>
<td>4</td>
<td>50</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Hardap</td>
<td>817</td>
<td>21,439</td>
<td>26</td>
<td>821</td>
<td>26</td>
<td>4</td>
<td>0</td>
<td>36</td>
<td>4</td>
<td>38</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Karas</td>
<td>675</td>
<td>17,617</td>
<td>26</td>
<td>659</td>
<td>27</td>
<td>-16</td>
<td>2</td>
<td>23</td>
<td>3</td>
<td>31</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Kavango</td>
<td>2,808</td>
<td>76,372</td>
<td>27</td>
<td>3,098</td>
<td>25</td>
<td>290</td>
<td>10</td>
<td>84</td>
<td>3</td>
<td>229</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Khomas</td>
<td>2,253</td>
<td>62,155</td>
<td>28</td>
<td>2,098</td>
<td>30</td>
<td>-155</td>
<td>7</td>
<td>60</td>
<td>3</td>
<td>138</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Kunene</td>
<td>801</td>
<td>19,549</td>
<td>24</td>
<td>776</td>
<td>25</td>
<td>-25</td>
<td>3</td>
<td>35</td>
<td>4</td>
<td>48</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Ohangwena</td>
<td>3,372</td>
<td>89,455</td>
<td>27</td>
<td>3,507</td>
<td>26</td>
<td>135</td>
<td>4</td>
<td>107</td>
<td>3</td>
<td>175</td>
<td>5</td>
<td></td>
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<tr>
<td>Omaheke</td>
<td>581</td>
<td>15,206</td>
<td>26</td>
<td>565</td>
<td>27</td>
<td>-16</td>
<td>3</td>
<td>11</td>
<td>2</td>
<td>19</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Omusati</td>
<td>3,582</td>
<td>85,350</td>
<td>24</td>
<td>3,472</td>
<td>25</td>
<td>-110</td>
<td>3</td>
<td>145</td>
<td>4</td>
<td>200</td>
<td>6</td>
<td></td>
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<tr>
<td>Oshana</td>
<td>2,051</td>
<td>49,052</td>
<td>24</td>
<td>1,956</td>
<td>25</td>
<td>-95</td>
<td>5</td>
<td>50</td>
<td>2</td>
<td>98</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Oshikoto</td>
<td>2,297</td>
<td>58,057</td>
<td>25</td>
<td>2,371</td>
<td>24</td>
<td>74</td>
<td>3</td>
<td>84</td>
<td>4</td>
<td>121</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Otjozondjupa</td>
<td>1,260</td>
<td>35,588</td>
<td>28</td>
<td>1,287</td>
<td>28</td>
<td>27</td>
<td>2</td>
<td>54</td>
<td>4</td>
<td>68</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22,929</strong></td>
<td><strong>588,432</strong></td>
<td><strong>26</strong></td>
<td><strong>22,929</strong></td>
<td><strong>26</strong></td>
<td><strong>530</strong></td>
<td><strong>2</strong></td>
<td><strong>764</strong></td>
<td><strong>3</strong></td>
<td><strong>1,294</strong></td>
<td><strong>6</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The 510 total for across-region movement is half of the total of the region values in order to avoid double-counting the same teacher.

### Need for 6% of teachers to move in this scenario.

The last three panels of Table 4 indicate how many teachers would have to move between schools in order to achieve the ‘equity norm’ LTRs. Altogether 510 teachers would have to move to a school in another region, whilst 773 teachers would have to move to another school in the same region. This is assuming one wanted to minimise the across-region movement of teachers. One could also construct feasible scenarios where much higher numbers of teachers move across regions. In total, 6% of teachers would need to move to achieve the school LTRs considered ideal here. This 6% contrasts with the 3% implied by the analysis of Bennell et al. (2009: 56), which was discussed in Section 3. Why would this analysis produce a level of required teacher reallocation twice as large as what is implied by Bennell, when the method of Bennell et al. is less conservative insofar as they employ a norm based on actual policy (not on actual practice, as is done here)? It is difficult to answer this question, largely because Bennell’s method is not made explicit. For instance, it seems Bennell et al. did not use rounding in their calculation, which is likely to lead to an under-estimation of the number of teachers who should be moved. It is of course also possible that there has been a shift towards greater inequity in the distribution of teachers over the years.

Figure 12 illustrates where there is mainly an excess of teachers, and where there is mainly a deficit of teachers, using the criteria used for Table 4. The relative under-staffing of schools in Kavango and Oshikoto can be seen. According to Table 4, Kavango requires the largest decrease in the LTR of all regions. In contrast, the relative over-staffing of schools in Caprivi, a region requiring an increase in the average LTR, can be seen in the map. However, it is also clear from the map why much of the reallocation needs to occur within regions, given within-region inequities in the LTR.
Figure 12: Teacher excesses and deficits (2012)

Note: The cell colouring illustrates the average across schools in excess or deficit of teachers, with the average weighted by school enrolment.
Section 5

Proposals for Future Changes to the System

This section puts forward five recommended actions (or areas of action) intended to bring about a more equitable and efficient post-provisioning system in Namibia.

Firstly, establish a proper annual monitoring system based largely on existing data. Making changes to a system when knowledge about the dynamics of the system is severely limited is risky. For this reason, the first recommendation made here is to establish certain processes – many not that difficult to establish with the existing data – to improve the monitoring of school staffing. It should be remembered that certain things need to be monitored well regardless of what policy is in place. Moreover, good monitoring systems can improve how things get done even where policies are imperfect. If better policies are to be developed, then good information improves the chances of success. Thus information and knowledge are a key prerequisite for many things. There needs to be a commitment in the Ministry towards producing periodic reports on key matters that need monitoring. It is better to think of monitoring in terms of relatively standard reports, rather than once-off reviews. But monitoring reports should contain not just tables with numbers; numbers need to be analysed and discussed with a view to understanding problems and solutions.

What are a few of the key numbers which must be clarified, through some fixing of the existing data collection systems, but above all through better use of the available data sources? Numbers of temporary teachers must be clear. Patterns relating to personnel spending must become clearer, partly through analysis of the payroll microdata. (Relying on standard reports drawn from the payroll system is not enough.) The potential for school enrolment expansion at a very local level, and hence possible future demand for teachers, must be clear. Here it may be best to extrapolate figures based on age-specific learner counts in the school census data, as opposed to relying on household data. On a more operational level, the proportion of each region’s personnel budget already used up by the end of each month must be made clear, and Windhoek needs to share this information with regional officials.

Monitoring systems typically pay a lot of attention to the information needs of the centre, in this case the MoEAC in Windhoek, and not enough attention to the information needs of, for instance, regional planners. Changes initiated in Windhoek clearly need to respond, at least in part, to information needs at a local level. At the same time, Windhoek should not impose systems on regions without prior consultations, and should acknowledge that existing regional systems may in fact serve their purpose fairly well.
Secondly, establish a more pro-active approach to teacher supply. The visits to regions emphasised that there is a widely perceived under-supply of qualified teachers, especially at the primary level. Resolving this problem falls outside the ambit of the post provisioning system as defined in this report, yet it is clear that this system is premised on the availability of sufficient numbers of qualified teachers. If the overall teacher supply problem is not resolved, no amount of adjusting of the post provisioning system will ensure that all schools are properly staffed. This report has not focussed on establishing the shape and size of the teacher under-supply problem, and it appears that no recent and comprehensive analysis of this kind exists. Available data, in particular data generated by the teacher questionnaire in the Annual School Census, especially if combined with the geo-coordinates of schools, could be used to a far greater degree to clarify what the teacher under-supply dynamics are. This would in turn allow for more informed decisions by the Ministry on how to use loans, bursaries, incentives and available training institutions to tackle the under-supply problem.

One measure which could help to ease the teacher supply problem is better information on what vacant posts are available in schools across Namibia. The Ministry should set up a simple internet-based facility onto which regions could upload information on available posts, many of which emerge at points in the year which do not coincide with the national vacancy list released once annually.

Thirdly, establish a truly national and budget-sensitive formula on the distribution of school posts. A new national formula on the number of teacher and support staff posts to which each school is entitled seems necessary, yet this should be achieved with due caution, and with a clear idea of why a national formula is needed. There are two key reasons for a national formula being needed. Firstly, it is needed to ensure that there is equity, not just within regions but also across regions, in the delivery of basic education to young Namibians. Secondly, a national formula reduces complexity, something which carries high costs (for instance if regions each develop their own information systems) and which can sow confusion amongst stakeholders. At the same time, introducing a national formula might reduce the ability of regions to respond to very region-specific needs and dynamics. A national formula would need to be flexible enough to respond to some of these needs.

It was difficult to assess the degree to which officials in regions were truly supportive of having one national formula. A national formula is likely to bring about less informality in regions, and could be resisted by people with vested interests in the current arrangements. This underlines the importance of developing a national formula in consultation with a range of key stakeholders, including officials from regions, but also representatives from the school level, meaning principals, teachers and parents. But apart from consultations, there would need to be technical work establishing what the implications of any formula would be for the actual distribution of teachers across schools.

What should a new national formula encompass? It needs to use information on a variety of factors discussed in this report, particularly enrolment and grades offered. It needs to be sensitive to the needs of small schools and take the likelihood of multi-grade teaching explicitly into account. It should only establish entitlements to posts which are affordable (perhaps in the manner of the 2006 proposed norms). The formula would need to be linked to a national policy aimed at reducing the fraudulent inflation of learner numbers. Equity principles would have to be defended where posts were linked to facilities or curriculum diversity. For instance, if a
computer centre in a school increased a school's right to posts, one would also need to ensure that there was a policy promoting the equitable distribution of computer centres.

**Fourthly, provide sufficient policy guidance with respect to gap-fill measures, in particular the employment of temporary teachers.** A new national formula would take many years to become fully operational, especially in a context of an under-supply of qualified teachers. Gap-fill measures, for instance the appointment of temporary under-qualified teachers, would remain necessary for years. What should be done soon, even before a national formula is finalised, is to establish sufficient policy guidance around these gap-fill measures. For instance, national policy on how the best possible person should be appointed in the absence of a qualified teacher, where a post is established, should be formulated.

**Fifthly, establish clear dispute resolution procedures to deal with disagreements between the School Board and the region with regard to teacher selections.** Clearer policy on how posts are established and filled should reduce disputes between schools and regional offices. However, there will always be some disputes and it is important that proper channels exist for them. This is partly because schooling systems, being hierarchical, very easily allow officials to override, and disempower, school principals, often to the detriment of service delivery. The notion that schools should be made accountable for learning outcomes is inextricably linked to the ability of school principals, and parents, to bring about changes in a school, which is in turn closely linked to who becomes a teacher in the school. On the one hand, the administration needs to be able to act against corrupt practices in schools, which includes the appointment of local community members who are not the best available teachers. On the other hand, schools need access to clearly defined procedures to challenge decisions taken by the administration which are not believed to be in the school’s interest.

### References


