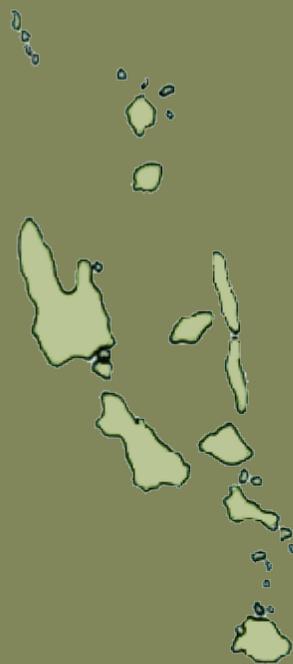# INFORMATION MANAGEMENT IN THE EDUCATION SECTOR

POLICY STATEMENT

AUGUST 2014

FORWARD

The Ministry, through this policy statement, will provide a framework for information management within the sector that is consistent with and supportive of national policies. The Policy focuses on information management within the sector. Policies of curriculum content and the use of ICT to enhance pedagogy will be developed as part of the Ministry's *Curriculum Development Program*.

The Objectives set out in the Education Policy Statement, 2009-2012 include both a focus on the delivery of a relevant quality education for all and strengthened administration and management. Information is the lifeblood of a well-managed and accountable education system. This is recognised in a policy priority of the Ministry's Corporate Plan 2012-2014, *to improve and strengthen the management of the education system*. The National Vision and these education policies make a very strong representation of the role of technology in a modern, vibrant and successful society. They envisage a solid technology base through information and communication technology (ICT) to be reflected within curriculum, its delivery and the system support mechanisms and business applications in the education sector.

The Government, through the Government Initiative Plan, will develop a common backbone infrastructure for the public sector. This initiative will guide and assist the Ministry of Education (MoE) to establish and strengthen a provincial and school level ICT infrastructure as well as public ICT access to the education sector. These developments will range from the development of web portals and electronic databases to more complex information and management systems and business applications.

Jesse Dick

Director General
Ministry of Education

ACKNOWLEDGEMENTS

This Information Management in the Education Sector Policy Statement has been produced by the Policy and Planning Unit (PPU).

This Policy will ensure that the resources and efforts that are directed towards both improving information literacy through the curriculum and the use of information for effective decision making, are maximised through planned, coordinated and coherent activities and the efficient use of ICTs, both as management and pedagogical tools.

This policy document addresses the critical importance of a viable, reliable and authentic information system as the basis for not only monitoring progress but also as the basis for strategic planning, policy making, financial forecasting, evidence-based operational planning and trustworthy communication

The Ministry of Education would like to acknowledge the financial support from the New Zealand Government towards providing technical assistance in the development of this policy, and also would like to thank all of those who have assisted one way or the other in supporting the development of this document.

John Niroa

Director, Policy and Planning Unit
MINISTRY OF EDUCATION

ACRONYMS AND DEFINITIONS

Accountability: the extent to which responsibility and liability is given, assigned, or accepted within the context of monitoring and evaluation.

Baseline: the analytical quantity and or quality description of a situation prior to an intervention and is the measure against which progress can be assessed or comparisons made. It is an essential element of monitoring and evaluation.

Efficiency: a measure of how economically inputs are converted to results.

Evaluation: a systematic and objective assessment of an ongoing or completed policy, program, or project implementation and results. Assessment may be about relevance, efficiency, effectiveness, impact, sustainability and overall progress against original objectives.

ICT: information and communication technology and these are tools for enhancing pedagogy and learning opportunities, and information management.

ICT as a Pedagogical Tool: as ICT infrastructure, hardware and software become more readily available, schools will use ICT as a pedagogical tool to enhance teaching and learning. ICT provides a mechanism for pedagogical improvement through enhanced data collection on, and analysis of, student learning.

ICT Capability: includes the knowledge and skills to access, use, develop, create, and communicate information using ICT tools.

Impact: the long term effects of an intervention. The effects may direct and indirect, positive and negative, and intended or unintended.

Indicator: a quantitative or qualitative variable that shows a verifiable change resulting from an intervention measured against what was a planned result.

Input: a resource which may be human, financial or an item that is used to make a product or to produce a service.

Intervention: a planned action with the intention of making a change to a situation.

Monitoring: the use of the systematic collection of data and information related to specified indicators to show the extent of progress and achievement of expected results in relation to the deployment of planned resources.

Management: the day to day running of a program within the framework of established strategies, policies, processes and procedures.

Outcome: the short or medium-term effect of the result of an intervention.

Output: the observable product or service that results from an intervention.

Pedagogy teaching approaches and practices

Result: a measurable change in quantity and or quality of a situation caused by an intervention and is often measured by a performance indicator.

Review: an assessment of performance of a single or series of interventions that may refer to the results of monitoring and evaluation.

School Based Management (SBM): a decentralised approach to the governance, management and administration of schools by the school council and principal within a prescribed national framework of policies and procedures.

Sustainability: the continuation of planned benefits after the finish of a program of activities or interventions.

Stakeholders: the parties who are interested in or affected by a program of activities or interventions.

Transparency: the extent to which decision-making, reporting and evaluation processes are open and freely available to stakeholders and the wider public.

VEMIS: the current Vanuatu Education Management Information System based on an early childhood and schools set of databases. The Policy envisages an expanded set of databases for the sector to be gathered under the umbrella of the new VEMIS, **NVEMIS.**

Vanuatu Education Road Map (VERM): the prime education sector planning document that serves as the mandate for education sector development planning and implementation.

Contents

INTRODUCTION

Information literacy is the sustaining force of a knowledge society. Information literacy is recognised as *a basic human right in the digital world* as it empowers individuals *in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational, and educational goals*. (UNESCO 2008) Fostering information literacy as an educational outcome through the content and delivery of education will work to increase relevance to the labour market particularly as the use of information and communication technologies (ICTs) increases. The flow of information,in support of curriculum, pedagogy, and management and administration, is a measure of the efficiency of an education system.

This Policy will ensure that the resources and efforts that are directed towards both improving information literacy through the curriculum and the use of information for effective decision making, are maximised through planned, coordinated and coherent activities and the efficient use of ICTs, both as management and pedagogical tools.

This policy document addresses the critical importance of a viable, reliable and authentic information system as the basis for not only monitoring progress but also as the basis for strategic planning, policy making, financial forecasting,evidence-based operational planning and trustworthy communication.

The Ministry will develop a separate Curriculum Content and Pedagogy Policy Statement and Guidelines to support the promotion of information literacy as an educational outcome and the use of ICT tools to enhance pedagogy and learning opportunities.

STATEMENT OF POLICY

The Ministry of Education will govern all aspects of information in the education sector to:

- ◦ **develop and maintain efficient centralised sector support systems of information management; and**
- ◦ **provide advice and guidance about information management to stakeholders at the central, provincial and institution levels.**

CONTEXT

Vanuatu Nationwide

The development and maintenance of a credible information system is at the very core of a successfully functioning public service and its aim to continuously improve access and service delivery quality.

The Government of the Republic of Vanuatu is committed to *Transforming Government Service Delivery* through the Vanuatu Integrated Government Initiative, 2011-2013. This Integrated Government Initiative Plan (iGov Plan) stems from the definition of iGovernment as having in place management processes for the use of web-based internet applications and other information management technologies and systemsby Government to:

- ◦ enhance the access to an delivery of government information services to citizens, the private sector, other agencies and other government entities; and
- ◦ integrate and strengthen government operations to increase effectiveness, efficiency, service quality, and to strengthen accountability, increase transparency and combat corruption.

The iGov Plan is based on a series of statements of high-level strategy, and planning and policy that support the National Vision, the Achievement of Millennium Development Goals (MDGs), and the Government's Strategic Priorities. These statements include: Priorities and Action Agenda, 2006-2015, and the National ICT Services Policy(draft).

The prime purpose of the iGov Plan is to establish the overall (information management) context and to provide strategic guidance for investment in government information and communication technology (ICT). The Plan sets out to address a key issue of line ministries and their supporting donors investing in, and developing unsustainable, incompatible and inefficient applications and platforms. The plan has the following objectives:

- ◦ define a strategic framework for the development and management of ICT architecture and services within the Vanuatu Government;
- ◦ define an institutional structure that will provide sustained leadership and coordination of the Government's ICT efforts;
- ◦ elaborate a set of key programmes to ensure the effective implementation of the national ICT policy goal and objectives;and
- ◦ Collect data on ICT usage as a baseline for monitoring development and program impact.

The best practice principles adopted for the iGov Plan include: partnership-based, results-oriented, standards-based, efficiency, transparency and integration. It is expected that the integrated strategic approach will lead to close collaboration and cooperation across all government ministries and agencies in working effectively with shared information needs and databases. iGovernment services

to line ministries include analysis of requirements, design and programming management and monitoring, change management support, and rollout management.

Guidance Documentation has been developed for database environments (VanGov DB Environment). The documentation provides guidance in the aspects of:

- database requirements
- drivers
- preferred database environments (products)
- database storage
- database management systems and accessibility (DBMS)
- connectivity
- reporting and analysis tools

The guidance extends to include comments about the current proliferation of MS Access databases, disadvantages of these databases and that any new MS Access application development is strongly discouraged as it will not meet key requirements of the guidelines and policy (draft).

Education Sector

There is a well-established tradition of schools providing information on a regular basis to higher authorities. There is a general sense of obligation about the need to provide information and a positive attitude at all levels towards changing information management to more efficient methods. A large amount of useful education information is collected for resource allocation purposes at the central level, policy, program and project monitoring, and analysis for country-wide, regional and international comparative and reporting purposes. The Ministry of Education Digest is an annual comprehensive publication of sector information and data.

The conditions are good for building on the positive aspects of the current systems to develop a more efficient system of information collection, collation and storage that will provide easy access byMinistry decision makers, and all those government ministries, agencies and others who use education statistics and information to formulate policy, make financial, including payroll and other resource decisions and to manage the teacher workforce. Some of the existing databases, including VEMIS include baseline and time series performance indicators.

The VEMIS Business Process Review, July 2011, provides a comprehensive situational analysis of information management in relation to the school sector and provides a series of recommendations to strengthen current collection, collation and storage processes for that database. A further set of recommendations focus on the effective use of data and information to better inform policy making, policy implementation, and management decision-making. The development of this Policy draws on the principles of operation set out in the Review.

This Policy will provide a framework for the development of a coherent set of related education databases accessible at the central, provincial and school levels and across ministries and agencies within the overall umbrella parameters of iGovernment. The expected outcome will be an efficiently managed free flow of information between all stakeholders.

Pacific

Vanuatu is a member state of the Pacific Islands Forum, an intergovernmental organisation of 16 independent nations of the Pacific. With a strong interest in supporting cooperation between member states, Vanuatu is an active supporter of the Pacific Plan including the macro-level priorities of developing and advocating sound social policy, particularly in support of education, gender and disability and coordination of their integration into national and regional policies. This, and other

regional initiatives such as the Secretariat of the Pacific Board for Educational Assessment (SPBEA), has required coordinated and consistent information flows to support both regional policy development and policy implementation. It is noteworthy that Vanuatu hosted the Forum Education Ministers' Meeting in May, 2012.

Common Matters
There are a number of matters that have been identified as requiring consideration in the development and implementation of this Policy. These include:

- developmental goals, objectives and monitoring and evaluation needs;
- planning for the use of ICTs in the context of educational reform;
- existing planning processes and institutional capacity, including collaboration between government departments;
- cultural and social contexts related to communication and information sharing;
- costs and budgeting;
- existing technologies including connectivity;
- capacity for training;
- decentralisation policies;
- legislative and regulatory frameworks; and
- equity and access.

POLICY RATIONALE

Within the education sector, information literacy is a base for subsequent learning, teacher training in student-centred pedagogy, and an ICT-capable work force. ICT capability includes the knowledge and skills to access, use, develop, create, and communicate information using ICT tools. The coordinated strengthening of the information systems in the education sector through support for improved information literacy at the Ministry and institution levelsrequires a policy framework.

The development of a credible information system is at the very heart of a successfully functioning education sector and improvements in access to and quality of education. ***Data and information are the lifeblood of an effective education system and one measure of its effectiveness is the efficiency of its information systems.*** A viable, reliable and authentic information system is critical for not only monitoring and evaluating progress but also as the basis for policy making and costing, evidence-based planning and informed decision making, and wider financial forecasting. Financial forecasting is an essential element of effective resource management; in its absence, expectations and planning are likely to be disconnected from the realities of available resources.

Educational data and information are critical to an information-based decision-making culture. A national policy framework will provide a consistent and understandable ICT 'game plan' for information management in the sector.

The aim of the Policy is to guide the development of a system that provides the sector with timely, accurate information to carry out its functions efficiently.

The Policy is an overall guiding policy document for the strengthening of the current system and to coordinate all information management activities within the sector. The Policy outlines the role of ICT in supporting the Vanuatu Education Sector Strategy 2007-2016 (VESS) and its implementation plan, the Vanuatu Education Road Map (VERM), principles, policies and standards of operation, review and

evaluation criteria, the range of operations, role and functions of existing and planned databases and coordination protocols.

GOALS AND OBJECTIVES

Two implementation goals and their associated objectives are identified to achieve the policy.

GOAL 1
A strengthened information system is developed that is responsive in a decentralised system for data and information management, forecasting, policy analysis, planning and operational decision making and management at all levels.

The viable system of authentic sector-wide information management will be based oniGovernment-compliant ICT-databases that compile, collate and report onrelevant information at all levels of the education system.The system will have at its corea common monitoring and evaluation results framework for VERM, and the Medium Term Budgetary Framework (MTBF).

The anticipated **outcome** is a comprehensive information management system in the education sector with high government ownership and high data accessibility for all stakeholders. The system will be capable of providing relevant and timely information for VERM implementation, monitoring and decision making.

Possible performance **indicators**for this goal include:
- data coverage, including percentage of institutions covered by the information management system;
- accuracy of data, validated by independent/external sources;
- collection rates;
- requests and response rates;
- number of knowledge products such as reports and publications produced by the information system;and
- Extent to which ICT within the sector conforms to the National Policy.

The anticipated **impact** of achieving this goal is:
- increased effectiveness of decision making in both planning and managing VERM implementation;
- increased MoE capacity to provide sector services and support in the meeting of its policy goals; and
- Enhanced public perception of the education system and trust in its capacity.

Objectives
1. Strengthened sector data management and coordination capacity of VEMIS and other education databasesto meet the internal information needs of the sector as well as being able to extend services to external clients and stakeholders.
2. Strengthened Decision Support System (DSS) with sophisticated analytical models and tools, and user-friendly software with reporting and data drill-down capabilities. The DSS will help the sector to identify opportunities and problems in VERM implementation and present options/solutions to assist the MoE decision making processes.
3. Strengthened Knowledge Management Capacity to enable MoE to meet its responsibility as aneducation knowledge source for the sector. Special focus will be given to strengthened

MoE research capacity to support VERM implementation planning and sector performance monitoring.

4. Agreed set of Monitoring and Evaluation and MTBF indicators (KPIs) to include VERM priority goals and objectives.

Risk Management

1. Coordination of initiatives and common coding systems, avoidance of duplication and minimisation of compliance costs in providing and accessing information may be best managed through the establishment of an overview group within the Ministry, through which all sector initiatives are approved.

2. The early adoption of an Education IT Master Plan based on the National ICT policy and related policy fields such as technology, industry, telecommunications and media. The IT Master Plan will include specific policies and strategies for developing a coordinated program of a comprehensive education information infrastructure at central, provincial and local levels, including the use of emerging technologies such as satellite, fibre optic networks, high-speed gateways and broad band/multimedia technologies. The plan will also define the rights and obligations of IT data and information users and providers, and propose appropriate necessary policies and regulations to guide IT system development and operations. The plan will be phased and costed and include alternative financing options, such as public private partnership arrangements. OGCIO will support the development of the Education Sector IT Master Plan as a technical lead adviser.

3. Development of Information System Standards (ISS) based on the National Policy and Education IT Master Plan. Management Information System (MIS) Standards will be developed with support from OGCIO and implemented for all centralised databases in the education sector. The standards could include but not be limited to:

      (i)   Common coding protocols;
      (ii)   Data dictionary (national to facilitate integration across departments);
      (iii)   Education indicators and formulae;
      (iv)   IS communication protocol;
      (v)   Data quality assurance mechanisms; and
      (vi)   Data base management system (DBMS).

Time for Completion: Five Years

GOAL 2
To have in place strengthened sector information management systems to support all operational functions at all levels through the upgrade of the current VEMIS, and other Ministry databases as well as the development of a comprehensive teacher workforce management database (TSC).

The information systems will be establishedwith sufficient resources and capacity to ensure the efficient operation of an expanded new VEMIS (NVEMIS)with multiple databases representing all of the Ministry's databases.

The achievement of this goal will consolidate and deepen information management within the MoE organisational structure and operation and will expand the utilisation of the NVEMISdatabases

(modules) to provincial and school levels in support of school based management (SBM) and decentralisation of Ministry functions.

The anticipated **outcome** will be a strengthened MoE operational evidence-based planning and monitoring capacity for the VERM program.

Possible performance**indicators**for this goal include:

- ◦ the number of upgraded and new databases (modules) developed to a functional stage;
- ◦ the number of NVEMIS modules implemented at decentralised levels;
- ◦ the return and accuracy rates of survey forms;
- ◦ the number and types of monitoring reports produced at the provincial levels; and
- ◦ the timeliness and quality of provincial reports.

The anticipated **impact** is an accelerated process of education decentralisation through the increased capacity of the MoE, Provincial Offices and schools in the management and reporting of operational data and information.

Objectives
1. Strengthened MoE and TSC operational management and information system capacity based on agreed plans and rollout for software development, IT hardware, and networking and communication infrastructure, developed in partnership with OGCIO.
2. Strengthened school-level data management and reporting through the introduction of a Unified School Recording-Keeping System by:
    (i) MoE development of unified school record-keeping/administration guidelines;
    (ii) training all school principals and administration staff on unified record keeping; and
    (iii) MoE formulating regulatory guidelines on school reporting as an obligatory function.
3. Developmentand trialling of IT-based record keeping software and phased rollout based on school capability with a 50% uptake in the first five years.

Risk Management
1. A key assumption is the Government's commitment to education administration and management decentralisation with delegated responsibilities to PEOs and schools. A significant risk is a lack of clarity and delineation of responsibilities and accountabilities between the central Ministry and decentralised levels. The review of the current Education and Teacher Service Acts will mandate the development of regulations to ensure clarity of delegated responsibilities and accountabilities.
2. The education decentralisation roadmap will clarify functions to be delegated and which levels these functions will be delegated to. The roadmap will also describe how these functions will be phased in and sequenced.
3. Capacity building for education officials at all levels from directors to data entry officers will be provided in a planned coordinated program.
4. Timely and accurate reporting by schools will be an obligatory function of all schools to be supported by detailed guidelines and training at the school level through the SBM initiatives.

Time for Completion: Phased implementation will take up tofive years.

The achievement of these two goals and their associated objectives will effectively position the MoE as the sector information manager capable of authentic:

- collection, collation and dissemination of information and statistics relating to all stages of education in Vanuatu;
- undertaking of focused research and sample surveys on education;
- reporting of educational information to stakeholders, including development partners and international organisations;
- management of education documentation archives; and
- ongoing information literacy and management training for the sector.

PRINCIPLES

The implementation of this Policy will be guided by the following principles.

1. *Application of (international) best practices* for implementing education information management systems to improve planning, organisational efficiencies, data collection and analysis, information sharing and transparency in the education sector, especially as these activities relate to helping meet objectives related to Education For All (EFA), the Millennium Development Goals (MDGs) and VERM.

2. *The characteristics of the expanded current VEMIS(NVEMIS) will be consistent with those prescribed within the Vanuatu National Information and ICT Policies*. These characteristics include the instruments and different steps for collecting and processing information and data, the tools of the information system and procedures for database management, methods to produce statistical information, definition and calculation of indicators, monitoring and evaluation protocols, verification procedures and report design and format.

3. *Data standards will be consistent across the sector*. Data elements, common codes and protocols to process and report them will be defined and accessible to all stakeholders.

4. *Open communication, information sharing and integrated information use*. This will require valid, timely data and information production and sharing among all interested parties for the effective use of data and information for educational policy and operational decision making.

5. *Data and information will be collected only when there is a valid purpose for its use*.Fostering information demand and use requires a culture of informed evidence and results-based decision making. Developing an approach of clearly identifying performance indicators and source of data and information to inform those indicators is essential in avoiding collecting data and information for nothing other than its own sake. It is also important that when particular information is collected it is collected only once and is available for multiple uses by a range of interested parties.

6. *A decentralised decision making environment requires a centralised information system*. Decentralised decision making is a major aspect of the current education development strategy. Essential issues identified as critical to supporting decentralisation include strengthened management practices that support an integrated and free flow of relevant information and data, at the school level (SBM), the provincial level and the central level.

FUNCTIONS OF THE MINISTRY

The MoE is designated as the central repository of education statistics, information and documentation in Vanuatu with the following key functions:
◦ Collection, compilation and dissemination of information and statistics relating all levels within the education sector.
◦ Conducting sample surveys on education aspects to support internal and external research.
◦ Disseminating educational information to stakeholders, including international organizations.
◦ Managing a country-wide *Documentation Centre for Education*.

The Ministry will maintain internal management Data and Information sets to support the following functions:
  ◦ Human Resources management
  ◦ Financial management
  ◦ Asset management
  ◦ Project management
  ◦ Document and Information management
  ◦ Financial and Resource Forecasting

Although the Ministry is a centralised agency, through its legal mandate, will work closely with the provincial authorities, schools, institutions and agencies in the maintenance of linked Data and Information sets for:
  ◦ All schools, years 1-13
  ◦ Registration of all early childhood centres
  ◦ Registration of all schools and institutions
  ◦ GIS School Mapping
  ◦ Teacher management, including registration, status, deployment, and payroll
  ◦ Scholarship management
  ◦ Secondary school examinations
  ◦ Curriculum development and resources

There is a well-established tradition of monitoring and evaluation in managing development processes and outcomes in the education sector in Vanuatu. Experience has shown that addressing monitoring and evaluation in the planning stage greatly improves the likelihood of successful outcomes. Agreement on the principles to guide monitoring and evaluation is a good start point to the development of an effective approach to the implementation of policies.

Key monitoring and evaluation development principles include:
  ◦ Participative planning
  ◦ Results-based monitoring
  ◦ Impartial evaluation
  ◦ Integrated into the implementation process at all phases and levels

Education sector planning documents have identified desired outcomes and many suitable indicators and targets to monitor progress have been determined. VERM is outcome oriented and identifies the road and destination ahead.

Suitable indicators set out to answer the questionsfor whom, where, how much, and by when?

Measurable performance indicators that are SMART[1] answer these questions as a requirement of an effective robust information system. Collecting and analysing data is the key function of monitoring and evaluation and core to the Information System. Measuring performance requires baseline information. Establishing baselines requires a planned predetermined collection of essential data and reporting to support the sector wide monitoring and evaluation framework. Primary data is collected by the Ministry and other agencies within the sector. For wider comparative purposes data collected by external organisations (secondary data) is used for example for international comparisons.

The development of performance indicators proceeds to link to the information management systems through answers to the following questions:
   ◦ What are the sources of data?
   ◦ What are the data collection methods?
   ◦ Who will collect the data?
   ◦ How often will the data be collected?
   ◦ What is the difficulty and cost of collecting the data?
   ◦ Who will report the data?
   ◦ Who will analyse the data?
   ◦ Who will use the data?

In order to ensure that data and information management is responsive in the decentralised environment, a possible approach to theMoE information system NVEMIS architecture is:

Management Functions	MIS Types & Purpose	MIS Functional Examples	Responsible Groups
Governance	Executive and Decision Support System	Forecasting and Modeling (e.g.enrolment projections, teacher demand and supply)	Senior Management Level: MoE leadership supported by OGCIO
	Policy/Strategic Monitoring and Knowledge Management	KPI reporting and sector performance analysis	
Management	Program/Operational Monitoring and Knowledge Management	Operations Grant, teacher workforce databases, payroll	Middle Management Level: Directors, Unit Managers, Provincial Offices(PEOs)
Operations	Office Automation and Transactional Processing	Budgeting/Accounting; Student Record Keeping;	Operational & Service Delivery Level: Schools/Councils; Local, Provincial, Central Agency Operational Units

An aim of the information system at the (decentralised) SBM and provincial levels will be to give the information they need to:

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[1] SMART indicators are: Specific, Measurable, Achievable and Attributable, Relevant and Realistic, and Time-bound, Timely, Trackable and Targeted.

- use indicators to describe the school sectors and to evaluate the performance of their schools/students in comparison to other provinces of Vanuatu;
- more effectively plan, budget, manage and monitor education services within schools;
- manage resources according to school and community needs and outcomes; and
- increase flexibility in decision-making at the local level;

and at the central level:

- build stronger partnerships at the government level, particularly between the education and finance ministries, to support the per-pupil based operational funding and improve the monitoring of education service delivery and outputs; and
- apply lessons learned from practice to improve policy decisions.

PROCEDURES

The Ministry will produce an *Information Management Handbook* in collaboration with education information stakeholders. The handbook will provide easy to read guidelines for all those involved in education information management processes. The guidelines will cover the following key procedures:

1. *Data Collection*
The main aspects will include:
- Roles and responsibilities of the person designated to undertake information management
- Definition of data elements and types (eg infrastructure, assets, financial, personnel, student)
- School and institutional record keeping
- Use of common codes and identifiers
- Regular census, surveys and other collection cycles

2. *Data Entry, Processing and Storage*
The main aspects will include:
- Data flow organisation
- Entry processes
- Quality control
- Data validation and verification (internal software and external audit)
- Data aggregation
- Management of all information and data retention and storage
- Data security
- Data submission and transmission timelines and requirements

3. *Data Analysis and Outputs*
The main aspects will include:
- Analytical and other system tools
- Report generation functions and report types
- Monitoring and Evaluation Frameworks

4. *Data Dissemination*
The main aspects will include:
- Accessibility of information and reports
- Website/on-line functionality
- Users' access rights

- ◦ Data sharing
- ◦ On-demand data requests

5. *Data Use*

The main aspects will include:
- ◦ School level reporting (SBM)
- ◦ Provincial level reporting (to, internal and from)
- ◦ Ministry level reporting(to, internal and from)
- ◦ Government and International Reporting

6. *Publications and Reports*

The main aspects will include:
- ◦ Annual publication of sector statistics
- ◦ Overview of subsector specific Reports
- ◦ Performance analysis and reporting (Education Results Framework specific to sector interests)
- ◦ Forecasting Reports including Teacher workforce demand and supply
- ◦ Medium Term Budget Framework (MTBF)

STAKEHOLDERS IN THE EDUCATION SECTOR

The following key stakeholders are identified:

- ◦ Learners
- ◦ Teachers
- ◦ Technical support staff
- ◦ Parents
- ◦ Curriculum developers
- ◦ Teacher trainers
- ◦ Administrators
- ◦ Education Ministry
- ◦ Community-based organisations

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