

An Excel Based Analytical Tool for Undertaking an Internal PEFA Review or for Scoring a PEFA Analysis at the National or Sub- National Levels

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Design and Customization of “Looking” Diagnostic Tools
PFM - PAPUA NEW GUINEA
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Introduction 1

- ❖ As part of a UNCDF contract the consultant developed and tested a PEFA reporting tool fit for use by Papua New Guinea civil servants .
- ❖ The diagnostic was prepared using Standard PEFA 2011 Field guide and was redeveloped as a reduced PEFA set at the subnational level.
- ❖ These Excel tools will facilitate and expedite internal PEFA reviews and self evaluations at the national or sub national levels
- ❖ The National PEFA (2011) reporting tool will be presented at the ICGFM conference.
- ❖ These Excel tools do not have the sanction or approval of the PEFA Secretariat

What's in the file and worksheets- “An Excel Analytical Tool for 2011 PEFA”

1. Overview of PEFA
2. Overview of scoring, data entry and scoring for M1 and M2 and considerations for national and subnational PEFA
3. Comparative Master Scoring sheet for all indicators
4. Indicator sheets (28 PEFA national indicators, 3 donor indicators, 1 sub-national transfer indicator)

Each indicator includes 3-4 worksheets

- A. Brief description of Indicator
 - B. Indicator Data entry and calculation sheet
 - C. Grade Scoring Sheet using dimension averaging
 - D. Grade Scoring Sheet using PEFA 2011/2106 Table for selected Indicators
5. Grade Scoring sheet templates

Overview



This methodology is based on-

1. PEFA 2011 Fieldguide
2. PEFA 2013 Performance Measurement at the Sub National Level- Definitions and Typology
3. PEFA 2016 Supplementary Guidelines for Subnational Governments

Please refer to these documents for a detailed Description of PEFA methodology and the individual scoring indicators

The PEFA workbook has been prepared to allow local government authorities to prepare a PEFA assessment in an expeditious fashion by automated all calculation and grading processes. It is still in a draft stage.

This methodology is provided to the Government of PNG on a pilot basis and has not been reviewed by the PEFA Secretariat and does not have the approval of the PEFA Secretariat

National and Sub National PEFA

- ▶ National PEFA have a standardized content. However subnational PEFAs are customized depending on
 1. Level of government subject to PEFA
 2. Objectives and Terms of Reference of the PEFA analysis
 3. Availability of Information at the Sub National level (Try to minimize and control potential “NS”)
 4. Capacity, resources and timeframe of the PEFA team.

Information on preparing and undertaking a sub-national EFA are available on the PEFA website www.pefa.org

Scoring the Indicators

1. Each of the indicators has from 1 to 4 components called "dimensions" in the PEFA Guides.
2. Scoring the indicator is based on either using the minimum value included of the dimensions (M1 Method) or using an averaging calculation of the dimensions (M2 Method).
3. Using the M1 calculation method, the score for the entire dimension is the minimum of the dimension scores adjusted upward "+" if another dimension in the indicator has scored higher than the minimum. The M2 scoring method uses an average value.
4. The score on the indicator using the M2 method is an average value for the score on the individual dimensions. In actual practise this value is determined not by averaging but in reference to a table contained in the PEFA reference materials which only approximates the mathematical "average" score calculation.
5. If a dimension cannot be reliably scored it is assigned "ns" and graded as "no score" . A "ns" will not affect the average score calculation under the M2 calculation. This calculation is a simplification of standard PEFA methodology which uses 2 (PEFA 2016) or 3(PEFA 2011) variants of "ns" not applicable, not used or not rated.

PEFA Scoring with M2 “Averaging” of dimensions

- ❖ For an indicator with only one dimension that grade is the same for M1 and M2
- ❖ For multi-dimensional indicators the grade is determined through averaging the individual dimension scores.
- ❖ PEFA 2011 and 2016 contain (the same) conversion tables for 2, 3 and 4 dimensions which determine the average grade for all combinations of scores in calculating M2
- ❖ However these scores are not the arithmetic average of scores in 3 or 4 dimensions using a “1” interval between grades (such as A=4,B=3,C=2,D=1)
- ❖ With 3 dimensions “.33” must be added to the individual scores to arrive at the PEFA table grade
- ❖ With 4 dimensions “.25” must be added to the individual scores to arrive at the PEFA table grade
- ❖ By comparison without the adjustments 20% of 3 dimension averaged calculated grades are lower than the score for identical 3 dimension grades determined by the PEFA conversion table.
- ❖ And 30% of 4 dimension averaged calculated grades without the adjustment are lower than the score for identical 4 dimension grades determined by the PEFA conversion table

PEFA 2011/2016 PEFA Grade Conversion Table

TABLE 1: Conversion table for indicator scores using the averaging method M2 (AV)

I	Dimension scores			Overall M2 (AV) score	Dimension scores				Overall M2 (AV) score
	2-DIMENSIONAL INDICATORS				4-DIMENSIONAL INDICATORS				
	D	D	D	D	D	D	D	D	D
	D	C	D	D+	D	D	D	C	D
	D	B	C	C	D	D	D	B	D+
	D	A	C	C+	D	D	D	A	D+
	C	C	C	C	D	D	C	C	D+
	C	B	C	C+	D	D	C	B	D+
	C	A	B	B	D	D	C	A	C
	B	B	B	B	D	D	B	B	C
	B	A	B	B+	D	D	B	A	C+
	A	A	A	A	D	D	A	A	C+
	3-DIMENSIONAL INDICATORS				D	C	C	C	D+
	D	D	D	D	D	C	C	B	C
	D	D	C	D+	D	C	C	A	C+
	D	D	B	D+	D	C	C	B	C+
	D	D	A	C	D	C	B	B	C+
	D	C	C	D+	D	C	B	A	C+
	D	C	B	C	D	C	A	A	B
	D	C	A	C+	D	B	B	B	C+
	D	B	B	C+	D	B	B	A	B
	D	B	A	B	D	B	A	A	B
	D	A	A	B	D	A	A	A	B+
	C	C	C	C	C	C	C	C	C
	C	C	B	C+	C	C	C	B	C+
	C	C	A	B	C	C	C	A	C+
	C	C	A	B	C	C	B	B	C+
	C	B	B	B	C	C	B	A	B
	C	B	A	B	C	C	A	A	B
	C	A	A	B+	C	B	B	B	B
	B	B	B	B	C	B	B	A	B
	B	B	A	B+	C	B	A	A	B+
	B	A	A	A	C	A	A	A	B+
	B	A	A	A	C	A	A	A	A
	A	A	A	A	B	B	B	B	B
	A	A	A	A	B	B	B	A	B+
	A	A	A	A	B	B	A	A	B+
	A	A	A	A	B	A	A	A	A
	A	A	A	A	A	A	A	A	A

NOTE: Dimension scores can be counted in any order. It is only the quantities of each score that are important for aggregation.

Table 1 **MUST NOT** be applied to indicators using the M1 (WL) scoring method.

PEFA Scoring with M2 “Averaging” of Dimensions

The analytical tool was originally prepared using M2 scores prepared using the arithmetic average of the dimension scores and not the PEFA 2011/2016 Table

For dimensions 12 and 19 a separate score for the “Aggregate Score from PEFA 2011 Grid” is provided. This score is calculated using a separate second master scoring sheet for the indicator which includes the PEFA grade conversion table. This table can be added to the other multi dimension indicators where the PEFA Table may provide a different grade from the aggregate average calculation.

It will only be relevant in calculation where the indicator-

- Is an M2 not M1 calculation
- The indicator has 3 or 4 dimensions

For M1 grades or M2 grades with 1 or 2 dimensions there is no discrepancy between average calculated score and PEFA 2011/2016 Table scores

Using Excel Form Tools Insert Developer in Ribbon

To Place Developer Tab in Ribbon

1. Click File Tab in Ribbon
2. Click "Options" in list
3. Click "Customize Ribbon"
4. Check "Developer" in column on right the "Customize Ribbon " column

<for hyperlink to video click this text box >

Forms Control Overview

The image displays the Microsoft Excel Developer ribbon, which is used for inserting and managing form controls. The ribbon includes the following groups:

- Record Macro**: Record Macro, Stop Recording, Relative References, Undo Macro Security, and Repeat.
- Add-ins**: Add-ins, Excel Add-ins, and COM Add-ins.
- Insert**: Insert (highlighted with a red arrow), Design Mode, and Run Dialog.
- Properties**: Properties, View Code, and Run Dialog.
- Source**: Source, Map Properties, Expansion Packs, Refresh Data, Import, and Export.
- XML**: XML.

The spreadsheet below the ribbon shows several form controls:

- Check Box 1**: A checked checkbox located in cell D5.
- List Box**: A list box containing the text "m1" located in cell O5.
- Option Button 1**: A radio button located in cell O6.
- Group Box 1**: A rectangular container located in cell B6.

A "Form Controls" task pane is overlaid on the spreadsheet, showing various control icons. Red arrows indicate the following connections:

- An arrow from the "Insert" button on the ribbon to the "Form Controls" task pane.
- An arrow from the "Form Controls" task pane to the "Check Box 1" control in the spreadsheet.
- An arrow from the "Form Controls" task pane to the "List Box" control in the spreadsheet.
- An arrow from the "Form Controls" task pane to the "Option Button 1" control in the spreadsheet.
- An arrow from the "Form Controls" task pane to the "Group Box 1" control in the spreadsheet.

1. Making Entries in the Data Entry Worksheet

For Each of the Indicators there are three worksheets

Worksheet 1 contains a description of the Indicator

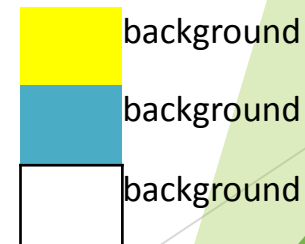
Worksheet 2 is for data selection, data entry and scoring of the indicator. All cells are locked except for the variables you will choose or enter

Worksheet 3/4 contain "Scoring" cells (contains a formula) for scoring the indicator for M1 and M2 methods. They are locked to prevent changing the formula

Data Entry cells have a

Scoring cells have a

Buttons or Checkboxes are



You can only change data entry, data and selection of check and button cells. All other cells are locked. However there is no password to unlock the cells. You may unlock them anytime but please backup the locked file first !

2. Making Entries in the Data Entry Worksheet

Besides Data entry you will encounter several types of cells for data selection

1	Scroll down lists to select from list			M2		M1	
						M2	
2	Check Boxes to select multiple choices			<input type="checkbox"/> Yes		FALSE	
3.1	Option Buttons					2	
3.2	Group Frames to select exclusive			<div style="border: 1px solid black; padding: 5px;"> Group Box 4 <input type="radio"/> A <input checked="" type="radio"/> B </div>			

Using Excel Form Tools Checkbox

The image shows an Excel spreadsheet with columns A through J. A 'Form Controls' task pane is open on the left, showing various control icons. A 'Group Box 1' is placed in column F, containing four checkboxes: 'Check Box 1' (checked), 'Check Box 2', 'Check Box 3', and 'Check Box 4'. To the right of the group box, the corresponding boolean values are listed: TRUE, FALSE, FALSE, and FALSE. Below the group box, a cell contains the text 'How Many checks in Group Box ?' with the value '0'. A red box on the left contains a caution about checkboxes not fitting entirely within a group box. A yellow box at the bottom provides a tip on using checkboxes individually or in a group box.

A	B	C	D	E	F	G	H	I	J
					<input checked="" type="checkbox"/> Check Box 1		TRUE		
					<input type="checkbox"/> Check Box 2		FALSE		
					<input type="checkbox"/> Check Box 3		FALSE		
					<input type="checkbox"/> Check Box 4		FALSE		
					How Many checks in Group Box ?		0		

CAUTION: If any Check Box does not fit **entirely within** the Group Box the referenced/linked cell will not work correctly

Use a check box individually or 2 or more within a group box to indicate single or summed "yes" or "no"

Using Excel Form Tools Option Buttons

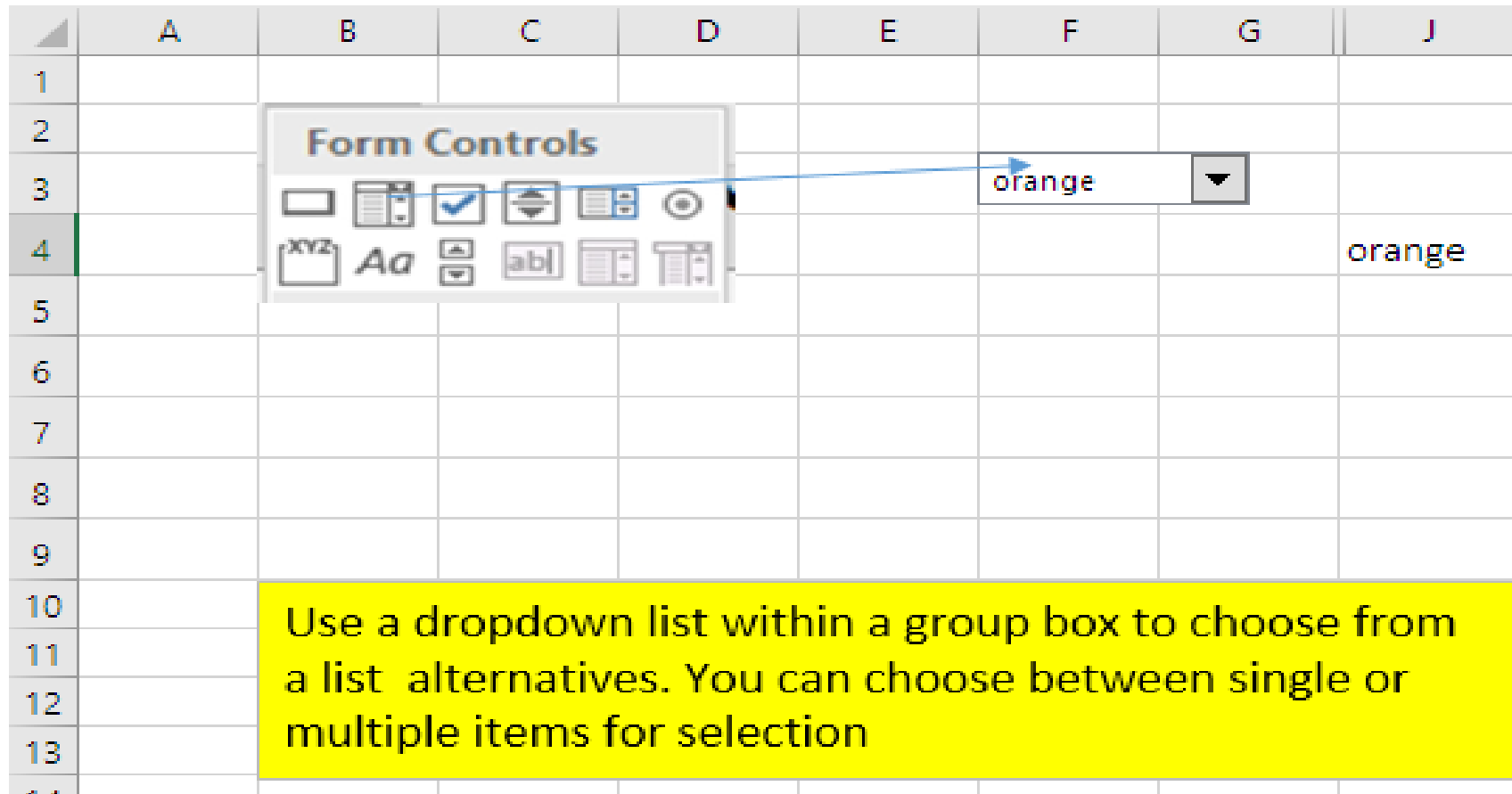
The screenshot shows an Excel spreadsheet with a 'Form Controls' task pane on the left. The task pane contains various controls, including a radio button icon. A red arrow points from this icon to a group box labeled 'Group Box 2' in cell D3. Inside the group box, there are three option buttons: 'Option Button 1' (selected), 'Option Button 2', and 'Option Button 3'. A blue arrow points from the group box to cell F14, which contains the text 'Which button is picked?' and the value '1'. A red box with a white border contains the text: 'CAUTION: If any Option Button does not fit entirely within the Group Box the Group Box and referenced/linked cell will not work correctly!'. A yellow box with a white border contains the text: 'Use option buttons within a group box to choose between multiple exclusive alternatives. Within the group box only 1 of the 3 option buttons can be selected'.

	A	B	C	D	E	F	G	H	I
1									
2									
3				Group Box 2					
4				<input checked="" type="radio"/> Option Button 1					
5				<input type="radio"/> Option Button 2					
6				<input type="radio"/> Option Button 3					
7									
8									
9									
10									
11									
12									
13									
14						Which button is picked ?			
15									
16									
17									
18									
19									

CAUTION: If any Option Button does not fit entirely within the Group Box the Group Box and referenced/linked cell will not work correctly!

Use option buttons within a group box to choose between multiple exclusive alternatives. Within the group box only 1 of the 3 option buttons can be selected

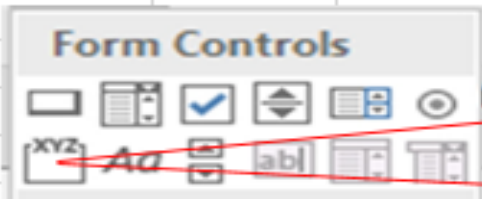
Using Excel Form Tools - Drop Down Lists



The screenshot shows an Excel spreadsheet with columns A through J and rows 1 through 14. A 'Form Controls' task pane is open in the center, displaying various control icons. A blue arrow points from the dropdown list icon in the task pane to a dropdown menu in cell F3. The dropdown menu is currently displaying 'orange'. In cell J4, the text 'orange' is visible, enclosed in a green bracket. A yellow text box at the bottom of the spreadsheet contains the following text:

Use a dropdown list within a group box to choose from a list alternatives. You can choose between single or multiple items for selection

Using Excel Form Tools-Group Box



Use Group Boxes -
When you have to separate results from different performance indicator questions on one excel worksheet, eg. Use with option buttons where the buttons within the box are linked to a unique cell.
Group boxes are not required for check boxes because you can count the range of linked cells to determine results.

Indicator 1
Group Box 1

Response below 50%

Response between 50-70%

Response above 70 %

Result of buttons 3-5 1

Indicator 2
Group Box 2

variance less than 10%

variance between 10-20 %

variance greater than 20%

Result of Buttons 6-8 2

Frequently Used Excel Formulas

Title	
VLOOKUP	Looks up value for an assigned cell from a table
IF	Returns a value in response to a condition
Sum & Count	Sum or count of range and variants Such as “sumif” or “countifs”

“Vlookup” Function Arguments

Function Arguments ? X

VLOOKUP

Lookup_value	C2	= 4
Table_array	F2:G8	= {1,"red";2,"orange";3,"yellow";4,"gre...
Col_index_num	2	= 2
Range_lookup	TRUE	= TRUE

= "green"

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.

Lookup_value is the value to be found in the first column of the table, and can be a value, a reference, or a text string.

Formula result = green

[Help on this function](#) OK Cancel

“Vlookup” Function Arguments

The image shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H
1								
2		4	4	1		1	red	
3				2		2	orange	
4		green		3		3	yellow	
5				4		4	green	
6				5		5	blue	
7				6		6	indigo	
8				7		7	violet	
9								

The formula bar shows: `=VLOOKUP(C2,F2:G8,2)`

Red arrows indicate the arguments:
 - The first argument `C2` points to the value `4` in cell C2.
 - The second argument `F2:G8` points to the table range containing the following data:
 | F | G |
 |---|---|
 | 1 | red |
 | 2 | orange |
 | 3 | yellow |
 | 4 | green |
 | 5 | blue |
 | 6 | indigo |
 | 7 | violet |
 - The third argument `2` points to the index number 2.

“IF” Function Arguments

Function Arguments

IF

Logical_test	D3 >= 55	= FALSE
Value_if_true	"Yes she Can"	= "Yes she Can"
Value_if_false	"No she cannot"	= "No she cannot"

Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.

Logical_test is any value or expression that can be evaluated to TRUE or FALSE.

Formula result = No she cannot

[Help on this function](#) OK Cancel

“IF” Function Arguments

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G
1	A person can collect a pension at 55						
2							
3	What is the peron's age			50			
4							
5	Can she collect a pension ?			No she cannot			
6							
7							
8							

The formula bar shows the formula: `=IF(D3>=55,"Yes she Can","No she cannot")`. Red arrows indicate the mapping of arguments: the first argument `D3` points to cell D3 (age 50), the second argument `"Yes she Can"` points to the empty cell D5, and the third argument `"No she cannot"` points to cell D5. A black arrow points to cell A5, and a green border highlights cell D5.

“Sum” & “Count "Function Arguments (+ variants)

Function Arguments

SUM

Number1	H3:H7	= {0;0;0;0;0}
Number2		= number
Number3		= number
Number4		= number

= 0

Adds all the numbers in a range of cells.

Number1: number1,number2,... are 1 to 255 numbers to sum. Logical values and text are ignored in cells, included if typed as arguments.

Formula result =

[Help on this function](#)

OK Cancel

“Sum” & “Count” Function Arguments (+ variants)

Function Arguments

SUM

Number1 A1:A12 = {0;8756;2879;0;1904;976;9480;0;8792;1...}

Number2 = number

= 38080

Adds all the numbers in a range of cells.

Number1: number1,number2,... are 1 to 255 numbers to sum. Logical values and text are ignored in cells, included if typed as arguments.

Formula result = 38080

[Help on this function](#) OK Cancel

Function Arguments

COUNT

Value1 A2:A12 = {8756;2879;0;1904;976;9480;0;8792;1...}

Value2 = number

= 11

Counts the number of cells in a range that contain numbers.

Value1: value1,value2,... are 1 to 255 arguments that can contain or refer to a variety of different types of data, but only numbers are counted.

Formula result = 11

[Help on this function](#) OK Cancel

Function Arguments

COUNTIF

Range A2:A12 = {8756;2879;0;1904;976;9480;0;8792;1...}

Criteria ">0" = ">0"

= 9

Counts the number of cells within a range that meet the given condition.

Range is the range of cells from which you want to count nonblank cells.

Formula result = 9

[Help on this function](#) OK Cancel

“Sum” & “Count” Function Arguments (+ variants)

	A	B	C	D
1				
2			5145	
3			1244	
4			0	
5			7454	
6			1947	
7			1287	
8			0	
9			3542	
10			7759	
11			5072	
12			9335	
13		sum	42785	
14		count	11	
15		countif>0	9	
16				
17				

Comparative Scoring Sheet

	A	B	C	D	G	H	I	L
2	PEFA Comparative Scores and Score Changes							
3	Indicator	For missing values in Year 1 enter "ns" for no score	Insert Values	Linked Values	Change in Grade	<p>Values in Column C (Year 1) are manually entered from historical data</p> <p>Values in Column D (Year 2) are automatically transferred from the appropriate worksheet</p> <p>Values in Column G (Change in Grade) are automatically calculated)</p>		
4	A. PFM OUT-TURNS: Credibility of the budget		Year 1	Year 2				
5	PI-1	Aggregate expenditure out-turn compared to original approved budget	ns	A	ns			
6	PI-2	Composition of expenditure out-turn compared to original approved budget	D	C+	↑			
7	PI-3	Aggregate revenue out-turn compared to original approved budget	B	D	↓			
8	PI-4	Stock and monitoring of expenditure payment arrears	D	C+	↑			
9	B. KEY CROSS-CUTTING ISSUES: Comprehensiveness and Transparency							
10	PI-5	Classification of the budget	A	D	↓			
11	PI-6	Comprehensiveness of information included in budget documentation	C	B	↑			
12	PI-7	Extent of unsupported government operations	D+	C	↑			
13	PI-8	Transparency of Inter-Governmental Fiscal Relations	C+	B	↑			
14	PI-9	Oversight of aggregate fiscal risk from other public sector entities	C+	C	↓			
15	PI-10	Public Access to key fiscal information	B	B	→			

Example Sheet A - Narrative (indicator3a)

An accurate revenue forecast is a key input to the preparation of a credible budget. Optimistic revenue forecasts can lead to unjustifiably large expenditure allocations and to larger fiscal deficits should spending not be reduced in response to an under-realization of revenue. On the other hand, pessimism in the forecast can result in the proceeds of an over-realization being used for spending that has not been subjected to the scrutiny of the budget process. As the consequences of under-realization are more severe, especially in the short term, the criteria used to score this indicator allow comparatively more flexibility when assessing revenue over-realization.

Example Sheet Master Grading Sheet

	A	B	C	D	E	F	G	H	
1	SCORING Indicators								
2	1 Dimension Indicator								
3									
4		Is Scoring Method M1 or M2 ?						M1	
5									
6		Single Dimensional Indicator						B	
7									
8		Overall Score						B	
9									
10									
11	2 Dimensional Indicator								
12									
13		Is Scoring Method M1 or M2 ?						M2	
14									
15		1st Dimension Indicator						C	
16									
17		2nd Dimension Indicator						A	
18									
19		Overall Score			M2			B	
20									
21					M1			C+	
22									
23	3 Dimensional Indicator								
24		Is Scoring Method M1 or M2 ?						M1	
25									
26		1st Dimension Indicator						NS	
27									
28		2nd Dimension Indicator						NS	
29									
30		3rd Dimension Indicator						B	
31									
32		Overall Score			M2			B	
33									
34					M1			B	

Example Sheet PEFA Grade Table

	A	B	T	U	V	W	X	Y	Z	AA	AB	AC	A
1		Values	David Ormandy: Table and Calculations in hidden columns										
2		=A4											
3		=A5											
4	D	=A6											
5	B	=A7											
6	A												
7	ns												
8			David Ormandy: Up to 4 indicator grades linked from Scoring worksheet										
9													
10													
11													
12													
13													
14													
15													
16													
17	lookup test												
18	value	DBA											
19	Indicator Score	B	David Ormandy: Value of indicator using PEFA 2011 tables for calculating M2 linked to scoring worksheet										
20													
21													
22													

This sheet uses the PEFA 2011 M2 table (hidden) for calculating Indicator scores for 1-4 dimensions and includes an adjustment for "ns" indicators. The M2 scoring methodology included in the model provided in the worksheets does not use the PEFA table but a calculated averaging method.

Detailed Examples from 2011 National PEFA

1. Indicator 3 - 1 Dimension based on data entry
2. Indicator 5 1 Dimension based on option buttons
3. Indicator 6 1 Dimension based on check boxes
4. Indicator 12 - 4 dimensions, M2 method, using option buttons
5. Indicator 19 - 4 dimensions , M2 method, using data entry, check boxes and option buttons

Indicator 3

- ▶ Similar to Indicators 1 and 2 Requires data entry and compares actual with expected results. The resulting grade is determined by the recent (3 year) variance between actual and expected amounts.

Indicator 5 Option Button

- ▶ Single dimension with option buttons

Indicator 6 Check Boxes

- ▶ Check Boxes with single dimension

Indicator 12 Multiple Form Tools

- ▶ Option buttons with three dimensions

Indicator 19 Multiple Form Tools

4 dimensions multiple tools, (data entry, check box and option buttons) and choice of scoring methodology using option buttons

Conclusion

- ▶ Methodology needs an update to PEFA 2016 and for Excel 2016 formulas (simplified “if” data entry)
- ▶ The format of PEFA scoring is such that once the use of four Excel tools and formulas are mastered for entries 3, 5, 6 12 and 19) adding additional indicators are easy to develop as are making changes to master score sheets.
- ▶ Use of the should promote more internal reviews of progress on PFM reform at national or sub-national levels.

Contacts and Links

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DropBox Link to this presentation and Excel Workbooks for national and Sub national PEFA-

https://www.dropbox.com/sh/e2gchrrr7zp98bo/AACxDZ_JqtsrX03syqonN3aha?dl=0

▶ And , of course, the definitive - [PEFA website](#)