I. INTRODUCTION

1. The RMI Economic & Fiscal Forecasting Framework (EFFF) is an extended version of the medium-term framework developed for the RMI as part of the Graduate School USA's annual review process. The original medium term framework, covering a three year forecasting period, was based on the IMF Financial Programming (FP) system. An FP which is most frequently a spreadsheet based model, projects the four main economic accounts of a nation: national accounts, fiscal, balance of payments and monetary survey. The long-term version has been developed to address the need for the RMI to prepare a Decrement Management Plan or DMP. The amended Compact of Free Association between the US and the RMI provides for an annual grant stream over a 20 year period FY2004-FY2023, with the annual grants being reduced by an annual decrement and lack of full inflation adjustment. Over time the real value of the grant stream diminishes which forces the RMI into economic and fiscal adjustment. There are a variety of policy options that the RMI can adopt to achieve fiscal sustainability. The EFFF was built to explore the implications of the different options and to assist the development of an overall program.

2. The development of the EFFF firstly required extension of the medium-term version of the model over the period FY2014-FY2023, the terminal year of the Compact. Improved statistical information had also enabled estimation of GDP by the expenditure approach, and thus to incorporate demand into a framework that otherwise had been essentially supply driven. It thus became possible to build a significant degree of simultaneity into the projections, and allow feedback between production, income, demand and in turn to back into output. Normal use of Excel prohibits the use of circularity. However, through the use of the "iteration" option, it was possible to develop a simplified macro-economic spreadsheet model of the RMI.

3. The intended use of the EFFF was in a participatory setting with the RMI leadership. Presented with the decrement issue the leadership was asked to construct a financial programming based on a selection of key adjustment options:

- Fiscal compression,
- Tax reform,
- Use of fishing fee (MIMRA) resources,
- SOE subsidy reduction, and
- Reduction in utility transfers to Majuro landowners.

The fiscal impact of each of the adjustments was presented in graphical form to the leadership. Through a process of individual examination of each reform, the leadership was able to construct a financially sustainable program.

4. This paper starts with a presentation of the EFFF and a description of each of the major components of the system. While it would be possible to specify the model algebraically, the approach adopted is to describe each element of the system. The second section considers the impact of each of the adjustment options over the period of the remaining Compact period and the overall result. The model together with this paper are to be found at: www.econmap.org. The final section contains an overview of the EFFF Excel workbook and how to use it.

II. THE EFFF SPECIFICATION

A. Production

5. This section describes the likely evolution of the major industrial activities in the RMI economy (it is useful during this exposition to refer to the Excel model workbook, which can be downloaded from www.econmap.org). Projections have been made for current and constant price GDP by industry. Five general methods of forecasting have been used, including:

- trend either linear, exponential or growth factor,
- moving average,
- prior knowledge, for example based on intended investment intentions,
- linkages to other economic variables, and
- Constant / unchanged.

6. Agriculture is comprised of two main activities: subsistence (non-marketed), and mixed income (primarily copra production.) Subsistence production has been forecast to grow in line with population change (0.7 percent), while copra production has been projected at the long-term growth rate of 2.3 percent per annum. Fishing is comprised of both formal and informal activities. Pan Pacific Foods, the major fish enterprise in the RMI, has indicated there is not expected to be any increase in the number of boats owned by the Company (although they expanded the number of leased boats to 2 in FY2012). The outlook for the loining plant is considered to be weak reflecting labor shortages, and the output of both activities is assumed to remain constant. The Marshall Islands Fishing Venture (MIFV), a joint venture between the government and Koos, is forecast to grow on trend, as is the Marshall Islands Marine Resource Authority (MIMRA). The Marshall Islands Fishing Company (MIFCO) is projected as a moving average of prior years, reflecting no anticipated expansion in shore-based long-line operations. Household fishing activity is projected as per population growth.

7. Manufacturing is comprised of coconut oil production and general manufacturing for the local market. The former is projected to grow in line with copra production, and the latter according to the overall level of aggregate demand in the economy (see the discussion of GDP(E) below). Electricity and water production is projected in line with aggregate demand. Commercial construction output is forecast as a combination of public and private demand. Public demand is linked to the level of public infrastructure projects, while private demand grows in line with GDP growth. In FY2012 a moratorium was placed on new disbursements of public infrastructure projects, but they are anticipated to resume in FY2015. The government (public works) also engages in construction and is forecast as a moving average, while construction of household dwellings is forecast in line with population growth.

8. Wholesaling and retailing is projected on the overall rate of aggregate demand in the economy, while the demand for tourism is anticipated to decline, reflecting recent trends. Output for the Marshall Islands Resort is forecast as a moving average. The transport and communications sector is comprised of a variety of different activities: general private sector transport services, the ports authority (MIPA), the state owned shipping company (MISC), the local airline (AMI), and the national telecommunications authority (NTA). Private sector

transport plus MIPA are forecast to grow in line with aggregate demand, while the rest are forecast as moving averages, reflecting public sector ownership. Financial intermediation has grown rapidly in recent years and is projected on trend. Imputed rent (home ownership) is projected according to the rate of population growth, while business and personal services are driven by domestic demand.

9. Government administration is comprised of a set of activities: national government, local government, and extra budgetary units. In the base scenario the national government is projected to remain unchanged, reflecting the recent trend. The two local governments, MALGOV and KALGOV, are assumed to remain constant, while extra budgetary units are projected as moving averages. Education and health services provided by the RMI government and are assumed to remain constant in real terms in the base scenario. The College of the Marshall Islands (CMI) is projected to grow by 2.5 percent (2.5 percent less than the trend rate of 5 percent), now that accreditation problems have been resolved.

10. There are four major categories of net indirect taxes: the gross receipts tax (GRT), import taxes, local government sales taxes and SOE subsidies. Import taxes are projected in line with economic aggregate demand, while the GRT is linked to those activities that generated the tax. Local government sales taxes are linked to the rate of growth of wholesaling and retailing, while subsidies are projected as a moving average.

11. During the amended Compact period since FY2003, the economy has grown by an annual average of 1.7 percent. The current projections in the baseline without adjustment suggest growth will be lower and average 0.7 percent during the FY2013-FY2023 period. The rate of projected economic growth clearly reflects the assumptions behind the individual activities. Construction is a major contributor in the early period as the use of the Compact sector infrastructure grant picks up again. Fisheries provide a small-but-steady growing contribution to the economy, but is not anticipated to make a large contribution to GDP growth. The outlook for tourism in not expected to be buoyant reflecting the RMI's remote geographical location and lack tourism infrastructure. Public administration, education, and health services are set in the base projection to remain unchanged, reflecting a tight fiscal environment. While the overall result is weak economic growth some improvement in the economy is projected over the period.

B. Price and wage projections

12. Model prices are projected exogenously to the model on the basis of the "small country assumption". While this is a simplifying assumptions and non-traded goods prices would be domestically determined it is not unrealistic given the very small size of the RMI. Consumer prices are taken from the CBO (Congressional Budget Office) long-term forecasts of the US CPI as a proxy for the RMI CPI. Projections of the US GDP deflator are taken from World Bank projections. In the case of commodity prices the World Bank provides a very handy set of projections for the major commodities effecting the RMI: food, fuel, and coconut oil. Fish prices are decomposed into long-line Sashimi grade fish, and Purse Seine Skip Jack prices. Projections are made based on long-term trends which have been rising over the last 10 years. The supply conditions of the market would suggest that continuing strong prices would be likely in the future.

13. In the case of wages the model assumes that past trends are likely to continue into the future. Wage rates are projected on trend by institutional sector and by industry for the three main government industries: public administration, educations and health. In the private sector wages have been growing by between 1 and 2 percent per annum. In public administration wages have been growing by 0.7 percent. While there has been a wages freeze during much of this period, annual step increases and upgrading of skills have results in a small by steady wage drift. In educations and health wages have grown more strongly. In the former case wage rates have risen reflecting increasing teacher qualifications and the later due to scarcity of health sector workers. In a more comprehensive model wage rates would reflect labor market conditions, but in the simplified world of the MTMF wage rates are projected exogenously with user adjustment to indicate likely trends.

C. GDP at current prices and the generation of income account

14. The projection of the GDP at current prices is a relatively straight forward affair with the change in GDP at constant prices being indexed to the respective price or wage indicator. In general the constant price traded goods industries of the economy are inflated by the appropriate world price. For private sector non-traded goods the CPI (US) is used. In the case of general government the constant price series are multiplied by the projected wage rate change. The sum of all industry current price estimates provides the estimate of current GDP at basic prices. To this we must add the value of taxes on products: import taxes are indexed to aggregate demand, the GRT is indexed to that tax base (GDP of private sector industries) and local government sales taxes are indexed to the output in current prices of the wholesale and retail industries. The total of all industrial production and net indirect taxes provides the estimate of GDP at purchaser's values.

15. The generation of income account is the allocation of value added between compensation of employees, operating surplus, and "other taxes and subsidies on production". An estimate of compensation of employees is made by industry through multiplication of the base period data by the increase in industry constant price GDP growth and the respective wage index. The model thus implicitly assumes fixed factor proportions and that there is no potential for factor substitution. With an estimate of GDP in current prices it is possible to derive an estimate of operating surplus by industry residually. Other taxes and subsidies on production are minor, not known with any degree of accuracy, and may be ignored for practical modeling purposes.

D. The household sector account

16. We are now in a position to bring together the various components of the household sector account and move towards estimating household disposable income. Household income is generated from a series of value added components: compensation of employees from domestic production, compensation of employees from activity at the Kwajalein US base, less a small amount of short term foreign worker compensation, mixed income from production and withdrawals from quasi corporate income. Compensation of employees and mixed income from production are taken directly from the GDP estimates. The number of workers at the Kwajalein base are assumed to remain constant since the reduction in force is now complete, but that wages are expected to rise in line with historical averages. The small level of compensation outflow is assumed to grow in line with the CPI.

17. Withdrawals from quasi corporate income are estimated from private sector industry operating surplus estimates. An initial deduction is made for foreign ownership. From this is deducted interest charges on business loans, and 20 percent for corporate profits. The remainder is assumed to be distributed to households.

18. Turning next to primary incomes, household receive a small amount of interest on savings and time deposits. Substantial amounts are received by Kwajalein landowners for lease of the base, although some of these are non-resident. Certain transfer payments are also received from the government. On the secondary distribution of income account there are major receipts and payments to the social security administration. Social security payments are projected to grow in line with the growth in compensation of employees. Social security benefits are projected on the basis of the actuarial report provided to the SS Administration. Similarly health care contributions are estimated in relation to compensation, but benefits are paid through the Ministry of health and thus do not show up on the household account. Households pay wages taxes and receive certain social benefits from government. Finally, there are certain household remittances to and from the rest of the world. Adding up all the transaction enables an estimate of total household disposable income, which is either saved in fixed proportion to income (based on historical behavior) or consumed.

E. Gross domestic expenditure and demand

19. The GDE account is initially built in current prices and then deflated to derive the constant price estimates. Government final consumption expenditure is composed of three elements: the national government, frequently referred to RepMar by the auditors, government agencies and the local governments of Majuro (MalGov) and Kwajalein (KalGov). RepMar consumption expenditure is linked to the fiscal account of government outlays on compensation of employees and goods and services. Consumption of government agencies and local government is indexed to the relevant component of the GDP current price series.

20. Household final consumption expenditure is composed of three elements: household acquisitions or cash expenditures, ownership of dwellings and other non-marketed activities (subsistence). Household acquisitions are indexed to the change in household disposable income and allocation between savings and consumption. Household estimates for ownership of dwellings and subsistence are indexed to population growth and the CPI. The estimation of consumption of Non Profit Institutions Serving Households (NPISH) is driven by growth in the NPISH sector GDP growth in current prices.

21. Gross Fixed Capital Formation (GFCF) is decomposed at two levels RepMar and other institutions, and between types of fixed assets. In the case of RepMar GFCF is linked to the fiscal account. For other GFCF largely private sector, this is related to the growth in private sector GDP current price growth. As in many economic models no better investment function for a small open economy is reliably known. Change in inventories are not project.

22. Exports are projected and linked to the balance of payments estimates. On the import side, import of food is assumed to grow in relation to population in constant prices, but inflated by the world food price index. Imports of fuel and other goods is related to the growth in real

demand. Vessel provisioning an important import component is projected in related GDP activity in fishing. Service imports are based on the balance of payments projections.

23. The estimates of GDP(E) are now possible though adding up all the components of the account. Aggregate demand is considered to be the sum of final consumption plus gross capital formation plus exports.

24. GDP(E) at constant prices is generally estimated through deflation using the appropriate indicator. In the case of household non-market activity the constant price series is linked to population change. Imports with the exception of food are projected in real terms and linked to real demand growth.

F. The fiscal account

25. The fiscal projections are based on two different sets of assumptions: (i) revenues are driven by developments in the economy plus known levels of Compact receipts, and (ii) expenditures are projected on the basis of the current policy position. Taxes are projected based on rates of growth of the respective tax base, plus estimates of the buoyancy of each tax. Income taxes are projected in line with the total change in compensation of employees and a tax buoyancy ratio of 75 percent. The gross receipts tax is projected in line with private sector current price GDP and a buoyancy ratio of 129 percent. In the case of import taxes there has been virtually no change in the tax collections in recent years; some of this has been due to discretionary changes and some due to erosion of the base due to concessions and the like. Import taxes are thus projected on past performance and no change is assumed in nominal terms.

26. Receipt of Compact funds is based on the Compact agreement and projections of the U.S. GDP deflator. Federal program grants and other third country grants are assumed to remain largely unchanged and are projected as moving averages. There has recently been a moratorium on Capital grants (Compact infrastructure grant), but it has been anticipated that this will be removed in the near term. Capital grants are thus projected as the sum of the annual disbursements plus a catch up factor.

27. Nontax revenues are forecast on the basis of expected flows, where these are known with a degree of accuracy, or on past performance for other nontax revenues. Ship registry fees are projected in line with the agreement with the agency managing the registry. Fishing fees have been very buoyant in recent years with the implementation of the PNA (Partners to the Nauru Agreement) and new VDS (vessel day scheme). The baseline has assumed that the absorption of fishing fee revenue into the RepMar budget is held at the FY2014 level and grows in line with the projected increase in fish prices. Other minor forms of government revenue have been projected as moving averages.

28. On the expenditure side, under the base scenario it is assumed that payroll numbers for public administration, education and health remain unchanged. Wage rates are forecast to grow on trend, at approximately 0.6 percent per annum and 2 percent for public administration and education, respectively. However, in health the recent rapid growth in wages of 5 percent is moderated to 3 percent. For goods and services, fiscal discipline has been assumed to hold expenditures in constant prices but to rise in nominal terms in line with the CPI. It has been assumed that interest payments are based on repayment schedules, and SOE subsidies are

projected to rise with inflation. Transfers to other government agencies and local government are projected to remain flat in nominal terms. The unidentified category of miscellaneous expense contains a large number of items, including the significant payment to Majuro landowners for utility bills. These are projected as moving averages or indexed to inflation. Capital expenditures are linked to capital grant disbursements, plus $2.5 million for capital formation from other sources.

29. On the financing side the only significant item is debt repayment, which has been drawn from the projected schedule of the RMI's loan repayments. No new loans have been incorporated into the base scenario. Domestic other accounts payable has been treated as the residual on the fiscal account.

G. The balance of payments

30. The balance of payments is a less critical component of the economic system in the RMI than in economies with their own currency. Using the U.S. dollar insulates the economy from the need to take balance of payments protective action. Adopting somebody else's currency removes monetary policy as a tool of adjustment and focuses adjustment strategy squarely on fiscal policy. With that said the RMI EFFF has included the balance of payments and monetary accounts not only for completeness, but also as several important variables are derived from these accounts.

31. Projections of exports are linked to the relevant current price projections for fish and coconut oil and fuel re-exports to MEC fuel supplies to fishing vessels. Imports of goods are linked to the level of level GDP(E) imports. The major items of service exports include the output of the fish loining plant and shore-based services provided to fishing operators; these are linked to the output of the respective industries in GDP. Expenditures of visitors and tourists are linked to the growth in visitors and the CPI. Imports of services are linked to imports of goods, in the case of freight and insurance, and current price GDP for other items, such as business services and travel.

32. The major items of primary income receipts are compensation of employees of Marshallese workers at the U.S. military base, Kwajalein landowners' receipts, and receipt of interest and dividends on investments. Projections of Kwajalein workers assume that the reductions in numbers is now complete and will remain constant going forward but that wage rates rise on trend. Landowner receipts are specified according to the Compact agreement. The main item of primary income payments is dividends of Pan Pacific Foods, which grows in line with exports and operations. Secondary income flows are dominated by grants and receipt of Compact flows, which are consistent with the fiscal account. The College of the Marshall Islands receives Pell grants, and U.S. military personal pay the local wage tax. The former is assumed to grow in line with inflation, and the latter in accord with forecasts of compensation of employees at the base. Household remittances, both inward and outward, are not known with any degree of accuracy and have been projected in line with U.S. GDP, and household incomes, respectively.

33. The capital account inflows are dominated by Compact flows, and FAA airport improvement grants, all of which are known with a good degree of certainty. The RMI government makes periodic contributions to the CTF, which are treated as capital transfers.

Turning to the finance account, FDI is dominated by investment in enlargement of the Pan Pacific Foods purse seiner fleet but this is not projected in the baseline. Changes in portfolio investment reflect draw down of the various nuclear claims funds, and reductions in Social Security funds. Draw down of nuclear claims funds have been forecast on trend, while reductions in SS funds are derived from those indicated in the SS actuarial review (referred to earlier). On current trend the SS funds will be exhausted in FY2023 unless remedial action is taken by the RMI government. Changes in commercial banks foreign assets are consistent with the banking survey forecasts, and draw downs and repayments of the external debt are consistent with the external debt projections.

34. Overall, the balance of payments projections indicate declining trend towards the end of the amended Compact period and an average error of -$9.7 million during the projection period between FY2014 to FY2023. The sign of the error is negative in each year, and generally consistent with the magnitude of the errors and omission in the balance of payments during the enumerated historical period.

H. The banking survey

35. Starting with the liability side, demand deposits have displayed a lack of growth during the amended Compact and are forecast as a moving average. Both savings and time deposits have been more buoyant and are projected on recent trends. Future efforts might explore the relationship between money and GDP and if there is any stable relationship. Government deposits are assumed to remain constant, while the capital accounts have been projected as a linear trend, reflecting recent additions to the Bank of the Marshall Island's (BOMI) retained earnings/equity. On the asset side consumer lending is assumed to grow in line with increases in compensation of government employees, while commercial credit is projected in line with nominal GDP. Foreign assets are treated as a residual, and the resulting time series provides a plausible upward trend.

III. Baseline and Adjustment

A. The Baseline

36. The baseline projection of economic activity is shown in Figure 1. The major factors effecting the projection of the economy relate to the fisheries sector, infrastructure investment, and the provision of public sector services. The fisheries industry has been an important generator of economic growth, but during the remainder of the amended Compact it is projected to grow modestly. The output of the loining plant is constrained by labor shortages, and potential increases in off-shore purse seine operations are considered as non-resident despite being incorporated in the RMI. Some increase in home base operations for the fish fleet is, however, anticipated as well as in the operations of MIMRA the local entity managing the fishing resource.

37. In the case of construction the use of the infrastructure Compact sector grant has had a very significant impact on industry output. Once drawdowns under the grant had stabilized at the start of the amended Compact use of the grant average $12.5 million during FY2005-FY2011. In FY2012 due to a moratorium placed on the use of the grant drawdowns fell to $5.4 million and was reduced further to $4.2 million in FY2013. In FY2015 and subsequent years it is assumed that the grant comes back on line at the normal annual level plus a catch up. This gives rise to a spurt in construction activity, but a reduction in output once the back funds have been exhausted.

38. The output of the supply of government services is assumed to be constrained by the fiscal environment of diminishing real Compact sector grants. However, no actual adjustment to reduced funding levels has been programmed into the baseline. The level of both public administration, education and health services are projected to remain unchanged.

39. Figure 1 indicates both level of GDP in constant prices and the annual growth rates through FY2023. The average GDP growth through the period is 0.6 percent, which is below the average growth of 1.4 percent in the first half of the amended Compact. There is a sharp uptick in economic activity in FY2015 as construction activity resumes, which continues through FY2017. However, once the unused infrastructure grant funds have been exhausted construction output and GDP decline in FY2019-FY2020. Over the last few years of the amended Compact the economy grows at a steady state rate of 0.4 percent.

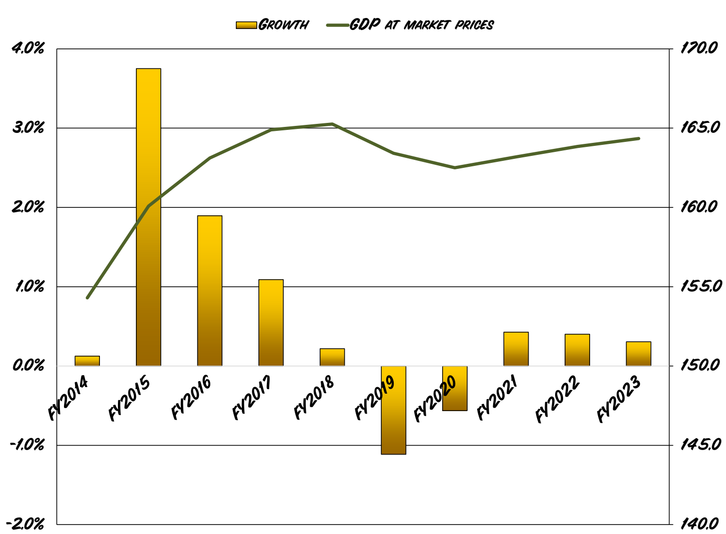

Figure 1 GDP projections over the long term, $'s millions and percent change, FY2014-FY2023

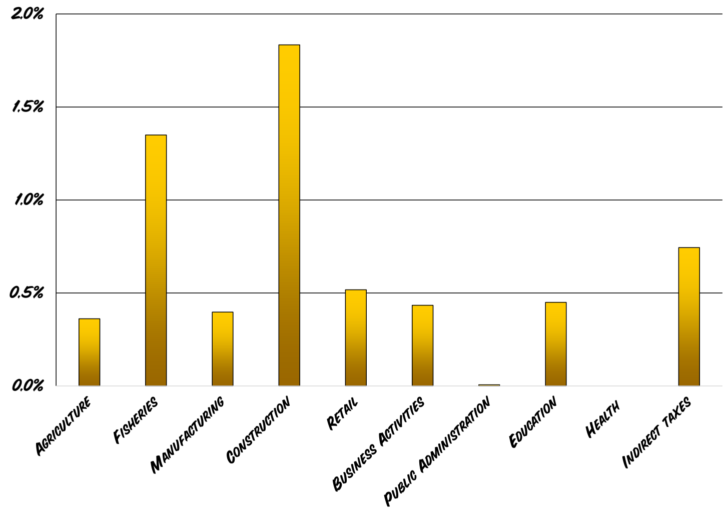

Figure 2 Contribution to GDP growth by industry, FY2014-FY2023

40. Figure 2 indicates the contribution of each major industry to the overall growth of 6.5 percent between FY2014 and FY2023. Clearly, construction is the major driving force to the end of the amended Compact. Fisheries is also an important player and other activities reflect the general level of demand in the economy. However, as to be anticipated public administration and health make zero contribution to the growth in GDP, while growth in education makes a positive contribution, reflecting the growth projected for the College of the Marshall Islands.

41. The fiscal outturn resulting from the baseline is shown in Figure 3. It represents the sum of the projections of government revenues, grant flows, less expenditures and outlays on fixed capital and debt drawdowns and repayment. It is not the same as the GFS (Government Finance Statistics) definition of fiscal deficit, which excludes debt transactions. However, in the RMI the measured deployed here closely represents the concept of change in fund balance, which is the operational measure used in budgeting. Figure 3 also indicates the accumulated fund deficit, the growing level funding need to finance government operations. In FY2015 an annual fund deficit of $1.6 million is projected; this rises to $9.7 million by FY2023. In terms of GDP this represents an increase from 0.8 percent of GDP rising to 4.1 percent in FY2023. In the absence of adjustment Figure 3 indicates the accumulation of debt required to fund the deficit. By FY2023 this has accumulated to $47.7 million. For an economy such as the RMI which has no access to capital markets this level of financing would not be sustainable and adjustment would be unavoidable.

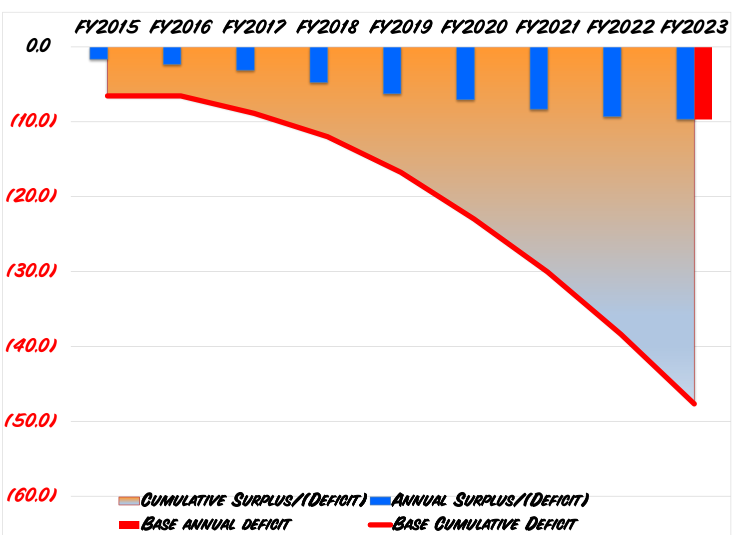

Figure 3 Fiscal deficit and accumulated fund balances, FY2015-FY2023

B. Adjustment to fiscal imbalance

42. At the onset of the RMI leadership meeting to prepare the Decrement Management Plan, the leadership was requested to assume a 15 percent reduction in funding and to prioritize cuts in government expenditures across departments to achieve balance. With this exercise complete the leadership was then presented with a set of alternative adjustment measures that would reduce the deficit and thereby avoid cuts in services should this be the collective decision. In addition to fiscal compression there were a total of five options:

- Expenditure compression: reduction in departmental expenditures
- Tax reform
- Use of MIMRA funds (fishing fees)
- Reduction in subsidies to the SOEs
- Reduction in transfers to Majuro Landowners for utility payments

43. The subsequent discussion presents the impact of these options on the economy and on fiscal balance.

1. Expenditure Compression

44. The expenditure cutting exercise completed by the leadership proposed the cuts indicated in Table 1 and the impact on the fiscal balance is shown in Figure 4. The exercise was designed to implement the cuts in three yearly tranches: FY2016, FY2018 and FY2021 with the first tranche delayed till FY2016 due to the impracticability of implement in the FY2015 budget. However, in addition to the proposed cuts it was recognized that there were unavoidable offsetting increases in expenditures in education, health, and the establishment of a new embassy in Korea. In education certification of teachers required a commitment by government to increase salaries. Certain increases in health wages had also been committed. In total the

Table 1 Expenditure cuts proposed by the leadership FY2016–FY2023 and committed increase in expenditures in FY2015, ($'millions)

	FY2015	FY2016	FY2018	FY2021	Total
Government administration					
Compensation of employees		$0.004	$0.402	$0.487	$0.893
Goods and services	$0.260	$0.356	$0.625	$0.658	$1.380
Transfers		$0.158			$0.158
Ministry of education					
Compensation of employees	$0.835				$0.835
Goods and services		$0.428	$0.988	$0.344	$1.759
Transfers				$0.469	$0.469
Minisry of Health					
Compensation of employees	$0.700				$0.700
Goods and services		$0.359	$0.495	$0.228	$1.082
Total	$1.795	$1.305	$2.510	$2.185	$4.205

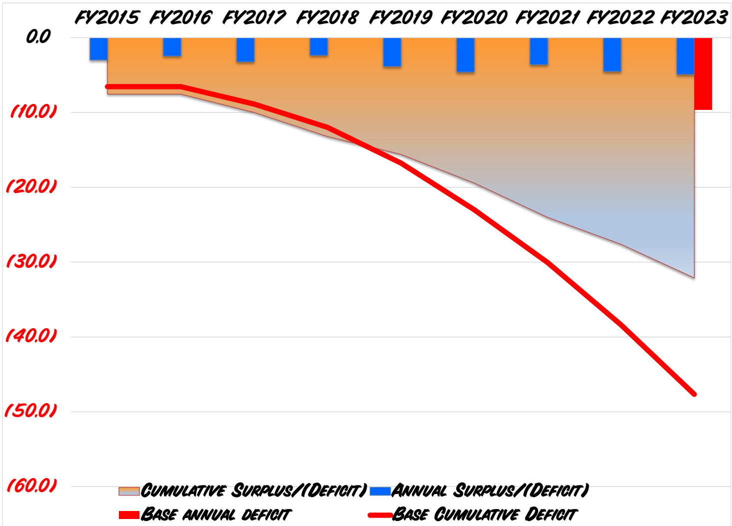

Figure 4 Impact of expenditure cuts on the fiscal deficit and fund balances, FY2015-FY2023

leadership had originally proposed a $6 million reduction in expenditures over the remainder of the Compact period, representing 9.4 percent of the total Ministerial outlays. After taking into account the additions for the new commitments the expenditure reduction falls to $4.2 million or 7.0 percent of the Ministerial outlays. In terms of the overall fiscal balance in FY2015 the outturn is negative as the new commitments take place without any reductions. In FY2016 the first tranche of cuts takes place, which effectively neutralizes the additional expenditures of the prior year. It is only in FY2018 that a positive impact on the fiscal balance is achieved when the fiscal deficit improves by $2.4 million; in FY2021 as a result of the 3rd tranche in reductions the fiscal savings amount to $4.7 million.

45. The impact on GDP is shown in Figure 5. In FY2015 the additional expenditures have a positive impact on GDP, which indicates a small increase of 0.2 percent. In FY2016, the first round of expenditure cuts takes place. However, the impact on GDP is relatively minor as it is limited to reductions in the use of goods and services while public sector employment and compensation of employees are unaffected. The impact is thus only through reduced demand and not directly on employment or reduced value added. In FY2018 the reductions have a negative impact on GDP of 0.6 perent, reflecting both a loss of 34 jobs (value added), and reduced demand for services. During the third tranche of reductions in FY2021 the impact is similar to FY2018. Overall, the adjustment of reducing government expenditures by 7 percent but limiting the redeuction in public servant jobs has a significant impact on the fiscal balance, while reducing the negative impact on GDP.

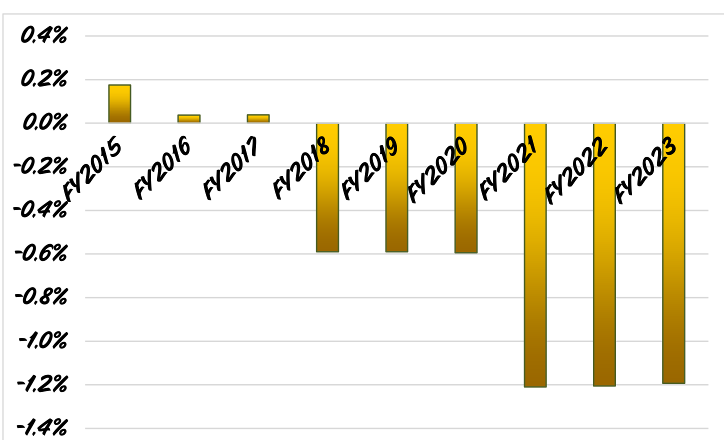

Figure 5 Impact of expenditure cuts on GDP percent change, FY2015-FY2023

2. Tax Reform

46. Tax reform has been an on-going reform strategy of the RMI for several years. A Tax and Revenue Reform and Modernization Commission (TRAM) was set up in 2009 to develop a proposal to reform the existing revenue system and

strengthen compliance and collections. The TRAM has been assisted by the donor community and a tax reform package proposed. The major elements entail the elimination of import duties and the business gross receipt tax, and replacement with a Net Profits Tax (NPT), VAT, and excises on selected items. The implementation of the new system was designed to be revenue neutral and draft legislation currently resides with the Nitijela.

47. While the leadership had the option to include tax reform as an element of the fiscal adjustment, it is generally accepted that implementation of a VAT and NPT will take up to two years. The earliest that the reforms might be introduced is thus FY2017. It was indicated to the conference that the modeling framework could simulate alternatives to the revenue neutral rate of 10 percent. However, while the leadership opted to include tax reform as be part of the adjustment, it did not deviate from the objective of revenue neutrality. The fiscal impact of the introduction of the tax reform is thus minor in FY2017. However, over the later part of the remaining years of the amended Compact the reformed system is revenue positive as the economy moves to a more efficient and buoyant tax system. In FY2023 an additional $1.2 million of fiscal savings is projected. The impact on GDP and the economy is projected to be positive reflecting the economically efficient nature of a VAT, although the impact is not great.

3. ADJUSTMENT THROUGH PROGRAMMING OF FISH LICENSE FEES

48. Receipt of fishing fees by the RMI has grown rapidly in recent years. From a level of $3 million in FY2010, the revenues of MIMRA have grown to $15 million in FY2013. This explosive growth reflects the impact of the Partners to the Nauru Agreement (PNA) and the introduction of the Vessel Day Scheme (VDS). From a level of $5,000 per fishing day prevailing in 2013, the rate has risen to $6,000 in 2014 and the PNA has agreed that a further increase to $8,000 will be introduced in 2015. In years prior to 2010 the MIMRA resources have been used to support the development and sustainability of the fishing industry. However, with the significant growth in fees and the return on a national resource, the revenues present a major fiscal resource. However, while a minor part of the resources has been programmed into the budget, the additional fees have not formed part of the annual budgeting process. The need for fiscal adjustment thus presents an opportunity not only to address the emerging structural deficit, but also to regularize the budgeting process.

49. As part of the projections the MIMRA account was projected over the remaining years of the amended Compact. The current agreed prices have been included (introduction of VDS of $8,000 in 2015), but no further although likely increase in VDA has been projected. Allowance has been included for inflation in fish prices at the US CPI rate, although again this remains significantly below the historical average. The operations of MIMRA are assumed to remain unchanged, but allowance for inflation and increases in wage rates have been incorporated. As a result a significant surplus emerges over the remainder to the amended Compact.

50. The leadership was presented with the option to program a given level of the surplus into the fiscal budget. A level of 80 percent was agreed, which would enable the remaining 20 percent to be devoted to the development of the fishing industry. In FY2015 it was estimated this would amount to about $3 million equivalent to the current operational needs of MIMRA. The leadership accepted that the reprogramming would be effective in the FY2015 budget, which would represent the only DMP adjustment measure to be introduced in that year. The result of

the programming on the fiscal budget are significant and in FY2015 fiscal savings of $4.9 million are achieved and sustained at this level through FY2023. The annual impact of the fishing fee adjustment is similar in FY2023 in magnitude to the expenditure cuts. However, the impact is throughout the period, whereas the full benefit of the expenditure cuts is only realized in FY2021.

51. The impact on GDP of use of the fishing fees to support the budget is difficult to access. The large gains in revenues have only been experienced in recent years and the resources have been used for items such as direct building purchase and support of the SOE sector. The EFFF has effectively assumed that prior use of these resources has had no impact on GDP, and that the opportunity cost going forward will be zero.

4. Reduction in Subsidies to SOEs

52. A major feature of the RMI economy is the large number of SOEs. Recent reform proposals such as the various ADB structural adjustment loans and the RMI's own Comprehensive Adjustment Program (CAP) have focused on this area. However, little progress has been made in this area and the total transfer to the sector is now in excess of $9 million in FY2013. The level of subsidy represents two major components: subsidy of inefficient industries and a significant social subsidy to support the communities in the outer islands and atolls. It is not envisaged that reduction in subsidy can be made easily or simply by stroke of the "pen". However, the leadership was presented with the option to reduce the level of subsidy as part of the overall adjustment.

53. The leadership agreed that the level of subsidy should be reduced in both FY2016 and FY2018 by 10 percent in each period. The fiscal savings in FY2016 amount to $0.8 million and $1.5 million in FY2018. It is assumed the reductions in subsidies can be achieved through efficiency gains and that there will be no change in GDP. It is envisaged that the current support the RMI has been receiving from the ADB and other donors to develop SOE business and adjustment plans will form part of the process through which the reductions will take place.

5. Majuro Land Owner Utility Bills

54. As compensation to Majuro landowners for the use of their land for placement of utility poles to support the power grid, a transfer has been paid by the government through the MEC to the land owners for easement rights. However, this transfer has grown rapidly in recent years from a level of $1 million in FY2010 to $2.1 million in FY2013. The subsidy has grown rapidly due to the increasing cost of electricity and also due to an increasing number of land owners as land has been subdivided. The practice has been widely criticized, it is inefficient as it encourages electricity usage, and the payment is unrelated to the land the poles reside on. It is estimated that current rentals are about $3,500 per acre, but average landowner benefits are about $5,000 and for multiple owners.

55. The leadership was presented the option to program a reduction over the adjustment period. Reductions of 20 percent were selected for FY2016, FY2018 and FY2021, respectively. The fiscal savings are estimated to grow in multiples of $0.4 million during the implementation years. The impact on GDP is minor and represents 0.1 percent in FY2023. It is envisaged that the

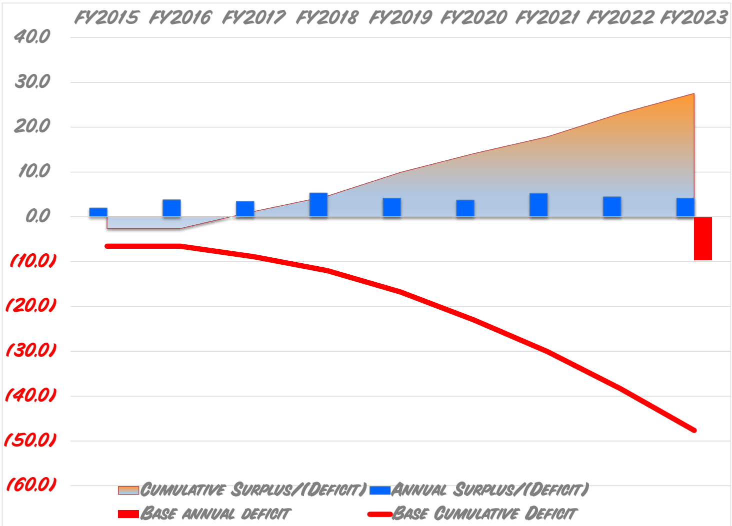

Figure 6 Impact of the combined adjustments measures on the annual and cumulative deficits, FY2015–FY2023

proposed reductions will require study before implementation and an appropriate level of land rental paid per pole.

6. The Combined Impact of the Adjustment Measures

56. The combined result of the fiscal adjustment measures is shown in Figure 6. From an initial baseline of an accumulated deficit of $47.7 million over the period and a deficit of $9.7 million in FY2023, the situation improves dramatically to an accumulated surplus of $27.5 million and surplus of $4.2 million in FY2023. The overall outcome is greater than required not simply to provide an adjustment path to the annual decrement and lack of full indexation of the Compact sector grants. The anticipated surplus will provide resources to address two further fiscal issues facing the RMI. Firstly, it is projected the Compact Trust Fund is unlikely to attain the level of required for a smooth transition to drawdowns from the fund in FY2023. Secondly, the RMI Social Security System is in dire need of reform. Without adjustment the SS system is projected to exhaust the current reserves by FY2023. The generation of additional resources resulting from the DMP is thus by design structured to provide funds to address the two other major pressing fiscal issues facing the nation.

57. Table 2 summarizes the various adjustment options selected by the DMP leadership meeting and their impact on the deficit. The baseline indicates the projected deficit from FY2015 through FY2023. The various adjustment measures indicate the savings generated compared with the baseline. The expenditure measures involve an increase in deficit in the early years due to the increase in payroll for teachers and health workers, plus the opening of an embassy in Korea. However, by the end of FY2023 the savings are substantial. The impact of the tax reform in

Table 2 Baseline projection of deficit, and difference to base of adjustment measures, FY2015–FY2023 ($'millions)

	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
Baseline projected deficit	(1.6)	(2.3)	(3.1)	(4.8)	(6.3)	(7.0)	(8.3)	(9.3)	(9.7)
Savings: difference to baseline									
Expenditure adjustment	(1.3)	(0.1)	(0.1)	2.4	2.4	2.5	4.7	4.8	4.8
Tax reform	0.0	0.0	0.3	0.3	0.6	0.8	1.0	1.1	1.2
MIMRA use of fishing fees	4.9	5.0	5.1	4.9	4.9	4.9	4.9	4.8	4.8
SOEs subsidy reduction	0.0	0.8	0.8	1.5	1.6	1.6	1.6	1.7	1.7
Landowner utility transfers	0.0	0.4	0.4	0.8	0.8	0.8	1.2	1.2	1.2
Total	3.6	6.1	6.6	10.1	10.4	10.8	13.5	13.7	13.8

FY2017 is minor as the reforms are designed to be revenue neutral. However, overtime the reforms make a positive contribution to the fiscal outturn. The impact of programming of the MIMRA surplus into the regular budget is very significant. In the early years it is larger than the required adjustment, but fails to grow overtime sufficiently to offset the growing impact of the decrement. The reduction in SOE subsidies and transfers to the Majuro landowners makes an important contribution although less than the major fiscal adjustments of the expenditures cuts and use of the MIMRA surplus.

C. Use of EFFF

58. The Excel workbook version of the EFFF can be downloaded from www.econmap.org. The EFFF is a macroeconomic model of the RMI economy based on the four major macroeconomic accounts: national accounts, fiscal, balance of payments, and monetary statistics. The workbook contains five input spreadsheets from the RMI economic statistics database corresponding to these accounts: “GDP_inputs”, “GDE_inputs”, “Fisc_inputs”, “BoP_inputs”, and “M&B_inputs”. The link to the source tables has been broken. There are five corresponding spreadsheets where the projections are made: “GDP_kp”, “GDP_cp”, “GDE, Fisc”, “Bop”, and “M&B”. There are two further input sheets: “Prices” and “Cgrants”, which contain the long-run price and Compact grants projections. There are two intermediate worksheets: “HslAcnt” and “GenInc”, which estimate household disposable incomes and generation of income statistics for compensation of employees and operating surplus.

59. There are two initial sheets. The first “RESULTS” provides a graph of the fiscal impact of the different scenarios and the second sheet “Scenario” enables the user to select the different scenario options. The scenario sheet contains the actual adjustment options selected by the RMI leadership.

- ***Expenditure cuts***: This option is selected through setting cell C10 to either 1 or 0. The FY2015 expenditure additions are in cells D25-D27 and maybe zeroed out to remove their influence on the results. They are stored in cells C25-C27 for safe keeping, but cells C25-C27 are not linked to any others in the workbook.
- ***Tax Reform***: Cell C29 may be selected to true or false to simulate the impact of the tax reform. The VAT rate can be set in cell F29.
- ***Fishing fees***: Cell C31 may be selected to true or false to include the use of fishing fees in the adjustment program. Cell D31 may set the degree of MIMRA fund use in cell D31.
- ***SOE subsidies***: The user may set the rate of reduction in SOE subsidies in cells D33 through L33. Take care not to exceed 100 percent.
- ***Landowner utility subsidy***: The user may set the rate of reduction in utility transfers in cells D35 through L35. Take care not to exceed 100 percent.

60. Excel must be set to “enable iterative calculation” under File/options/formulas (Office 2013 edition).