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FINANCIAL RESERVE DURING THE GEF-5 PERIOD

(PREPARED BY THE WORLD BANK AS TRUSTEE)

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Summary

As agreed during the second meeting of the GEF-5 Replenishment in June 2009, the World Bank, in its capacity as GEF Trustee, will expand the current foreign exchange reserve of the GEF Trust Fund in order to provide the Trust Fund resources with additional protection against the variability in donor cash flows resulting from foreign exchange volatility. It is important to note that a reserve is not a hedge against risks but rather a risk management tool. The main advantages of a reserve approach, as compared to other approaches such as hedging and currency matching that were considered for managing cash flow risk in the GEF Trust Fund, include its operational simplicity and transparency, and its ability to provide a dedicated cushion to protect the GEF Trust Fund from exchange rate and investment income volatility, over time.

This paper presents the results of the Bank's analysis carried out to assess the required levels for an expanded reserve under the replenishment scenarios considered in the GEF-5 Programming Document[1] (USD 3.1, USD 5, USD 6.5 and USD 9 billion), and explains how the reserve would be implemented.

[1] See GEF/R.5/19 "GEF-5 Programming Document" dated September 18, 2009.

I. Background

1. During the GEF-3 period, the Trustee introduced a reserve against resources in the GEF Trust Fund in order to mitigate the variability in cash flows resulting from exchange rate volatility. While commitments to Agencies are made in US dollars in part against non-USD promissory notes, there may be considerable foreign exchange movements on the future encashments of those promissory notes thereby posing a risk that the Trustee may not be able to meet its legal obligations to GEF Agencies.

2. The foreign exchange reserve helps to reduce the likelihood that the GEF Trust Fund may not have sufficient funds to disburse against Trustee commitments in US dollars at the time GEF Agencies request fund transfers. The reserve was specifically designed to exclude those resources set aside but not committed, pending CEO endorsement. Including these particular resources (i.e., set asides) in the reserve calculation would have constrained the GEF work program at a time when resources were already limited.

3. It is important to note that the reserve represents a virtual restriction set on the GEF Trust Fund resources available to support funding decisions, thereby protecting commitments made by the Trustee from the effect of exchange rate volatility. It is not a cash amount held in a separate account.

4. The current methodology for calculating the existing foreign exchange reserve takes into account prevailing exchange rates and is recalculated annually to reflect variations in GEF-4 donor receivables and unencashed promissory notes, both in the amounts and currency composition. Annex 1 and 2 provide further details on the GEF resources including those that are subject to exchange rate fluctuations and usage of the current foreign exchange reserve.

5. The reserve is currently set at USD 45 million and was determined based upon simulations of movements in foreign exchange rates over a 12-month horizon. It is equivalent to just over 1% of funds held in trust (approximately USD eq. 3.91 billion inclusive of promissory note balances),[2] or approximately 0.5% of cumulative resources pledged and committed.

6. During the GEF-4 period, the Trustee also explored the possibility of implementing a second reserve as a mitigation measure against volatility of investment income from the GEF liquid asset portfolio. However, given the frequently constrained funding availability and the relatively strong demand for resources, implementing this additional risk mitigation measure would have unduly restricted the work program of the GEF even further. It was therefore decided not to apply this second reserve during the GEF-4 period.

II. Expanded Reserve Level Scenarios during the GEF-5 Period

7. The expansion of the foreign exchange reserve during the GEF-5 period would cover not only Trustee commitments against non-USD promissory notes pending transfers to Agencies, but also projected GEF-5 donor receivables as well as un-encashed donor promissory note balances from previous GEF replenishments. To derive the reserve amount and to determine whether to

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[2] As of August 31, 2009.

include an amount in the reserve to cover volatility of investment income, the Trustee conducted an additional analysis to estimate: (i) the risk in projected cash flows during the GEF-5 period associated with exchange rate fluctuations; and (ii) investment income volatility during the same period. The four GEF-5 replenishment scenarios considered in the September 18, 2009 GEF-5 Programming Document (USD 3.1, USD 5, USD 6.5 and USD 9 billion) were used as a basis of the analysis.

8. The expanded foreign exchange reserve discussed in later paragraphs is based upon the simulations of movements in foreign exchange rates over a four-year horizon. The assessment of currency risks associated with exchange rate volatility draws on the following assumptions: (i) currency amounts provided by each donor reflect GEF-4 basic shares,[3] (ii) all donors to the GEF-5 replenishment provide contributions in their national currencies, i.e., approximately 86% of GEF-5 donor inflows would be denominated in non-USD currencies,[4] (iii) the timing of projected cash inflows is based on GEF-4 cash installments and encashment schedules; and (iv) disbursement patterns would mimic the existing GEF-4 indicative encashment schedules as presented in the GEF-4 replenishment resolution.

9. As noted previously, the foreign exchange reserve could potentially be further expanded to provide an additional cushion against the impact of risks associated with volatility in investment income on GEF's liquid asset portfolio that could arise from interest rate movements. The GEF Trust Fund undisbursed cash balance is invested in various financial instruments such as money market instruments, government and agency obligations, mortgage-backed securities, and other high-grade bonds. Investments in these instruments are "marked-to-market", meaning their value is adjusted regularly to reflect their current market value. This results in volatility of the reported investment income. Lower investment income would lower the amount available for commitments and disbursements.

10. The analysis carried out to (i) estimate a potential reserve to cover investment income volatility; and (ii) to determine whether to include such reserve in the expanded foreign exchange reserve, included an assessment of the interest rate risk using a starting balance of USD 3 billion and an assessment of the combined risks assuming they are uncorrelated. The calculation of the investment income volatility reserve does not take into account the expected interest earned on the balance of the fund.

11. Based on all the stated assumptions and the analysis performed, the Trustee derived a range of estimated potential levels of reserve to offset foreign exchange and investment income volatility during the GEF-5 period. Table 1 below shows the range of reserve levels for each GEF-5 replenishment scenario for risk related to exchange rate and investment income volatility. For each scenario, the minimum level represents the level of reserve needed to cover cumulative losses in the GEF Trust Fund portfolio associated with exchange rate risk during the first two years of a replenishment period. The maximum level covers the full four years of the GEF-5

[3] Using the GEF-4 basic shares.

[4] Donor inflows during the GEF-5 period (November 2010 – October 2015) include the projected GEF-5 donor cash payments and encashment of promissory notes as well as encashment of the remaining promissory notes balances from the previous GEF Replenishments.

period. The table also shows the amount of reserve needed to cover investment income volatility.

12. To illustrate, under the replenishment scenario of USD 6.5 billion, the minimum amount that the Trustee could reserve to cover exchange rate movements would be USD 195 million, representing about 3% of the projected GEF-5 pledged resources. The maximum amount under this scenario is USD 520 million, or about 8% of projected GEF-5 pledged resources. Adding in the reserve to cover investment income volatility, the total (combined) required reserve is estimated at between USD 221 million to USD 546 million, still in the range of 3% to 8% of projected GEF-5 pledged resources. In contrast, under the USD 3.1 billion replenishment scenario, the minimum total (combined) required reserve is estimated at USD 155 million and the maximum at USD 328 million (5% to 10% of the projected GEF-5 pledged resources). In sum, based on current assumptions, the lower the replenishment level, the higher amount of the total reserve in terms of the percentage of total resources.

13. Annex 3 provides further details on the methodology of the analysis performed to assess the level of the exchange rate and investment income volatility.

Table 1. GEF-5 Estimated Reserve Level
(in USD million)

Replenishment Size Scenario (in USD millions)	FX Risk Reserve						Investment Income Risk Reserve		Total (Combined) Reserve					
	Amount			% of Replenishment Size			Amount	% of Replenishment Size	Amount			% of Replenishment Size		
	(Min	-	Max)	(Min	-	Max)			(Min	-	Max)	(Min	-	Max)
3,131	107	-	280	3%	-	9%	48	2%	155	-	328	5%	-	10%
5,000	155	-	420	3%	-	8%	31	1%	186	-	451	4%	-	9%
6,500	195	-	520	3%	-	8%	26	0%	221	-	546	3%	-	8%
9,000	250	-	700	3%	-	8%	16	0%	266	-	716	3%	-	8%

14. In addition to exchange rate and investment income risk, other factors may further impact the amounts available for programming during the GEF-5 period, including the risk of donors not following through on their GEF-5 pledges, and the risk of donors building up arrears on their GEF-5 contributions. These potential events are best managed through the annual GEF business plan presented to the GEF Council. The following section explains in detail how such reserve could be implemented provides the optimal level of reserve under each replenishment scenario.

III. Implementation of the Expanded Reserve

15. In selecting the optimal level of a reserve for the GEF-5 period, the goal is to maximize the protection against adverse exchange rate movements and downward shifts in investment income without constraining the GEF-5 programming levels. In order to find the right balance in meeting the objective, the Trustee will implement the expanded reserve in a gradual manner,

based on annual reviews. At the outset of the replenishment period, the expanded reserve would be set to cover the first two years, rather than the four, of the replenishment period. The proposed approach of implementing the expanded reserve in a gradual manner, as opposed to full up-front implementation at the maximum reserve level, allows for more flexibility in the early years of the replenishment period. This approach, in contrast to a full-up front implementation, means that there remains a risk that programming levels in years 2-4 of the replenishment may have to be lowered, should the reserve level be raised following annual reviews. The Trustee believes that the benefits of a gradual approach outweigh the risks.

16. The actual reserve level will be confirmed at the completion of the GEF-5 Replenishment negotiations to take into account changes in market conditions, GEF-5 programming level requirements, and the currency composition and amounts of the final donor pledges. Thus, the figures in Table 1 are indicative. The actual amount to be reserved will depend on all influencing factors and will take into account the requirement to not constrain the GEF programming. It may be noted that reserve level estimates increase as both currency composition variability and share of the non-US dollar denominated contribution increase in a given replenishment scenario.

17. As noted above, during the course of the GEF-5 period, the expanded reserve level will be reviewed by the Trustee and adjusted, as needed, on an annual basis. Factors in this review will include (i) changes in projected foreign exchange and interest rates; (ii) the track record of donor payments received and actual investment income earned; and (iii) project cancellations. If necessary, the reserve level could be increased or decreased from the initial level, depending on changes in the key parameters and the impact on the amounts needed to protect the GEF Trust Fund from an over-commitment of resources. It is expected that, over time, as donor receivables are received and encashed, the reserve would be released and become available for programming. By the end of the GEF-5 replenishment period, the reserve may be reduced to the level required to ensure that the GEF Trust Fund has sufficient resources to disburse against commitments in US dollars already made by the Trustee (currently USD 45 million as noted in earlier paragraphs).

18. The Trustee notes that, as an alternative to lowering current programming levels, unexpected losses due to currency and interest rate volatility not covered by the reserve could also be covered through a deduction of programmable resources in the subsequent GEF replenishment period. This would be possible due to the multi-year overlap of disbursement periods between successive GEF replenishments. This alternative option would help maintain the current programming envelope, at the expense of funds becoming available for programming at the subsequent replenishment. Such financial trade-offs could be discussed by donors during the GEF-6 replenishment.

Annex 1. GEF Resources

1. The management of the financial flows of the GEF Trust Fund is described below. Contributions from Donors comprise the bulk of the incoming usable resources to the GEF Trust Fund. They are denominated in multiple currencies and as such are subject to foreign exchange exposure until they are converted into USD. Resources are also increased by investment income as well as any returned funds from the Agencies, including unused funds and investment income earned on the undisbursed balance of GEF funds transferred by the Trustee to the Agencies. The following represent the categories of resources of the GEF envelope:

- Donor Contributions:
    - Cash paid in – All non-USD cash receipts are converted to USD immediately upon receipt by the Trustee;
    - Promissory notes received as Installments – USD and non-USD balances, whose value remains subject to foreign exchange movements until notes are encashed;
    - Promissory notes converted to cash (i.e. note encashments) – non-USD encashments are converted to USD immediately upon receipt by the Trustee;
    - Installment Receivables
    - IoCs not yet deposited with the Trustee
- Investment income on GEF liquid assets;
- Investment income earned by the Agencies on undisbursed balances of the GEF funds they hold; this income is transferred back to the GEF Trust Fund in USD; and
- Returned funds from Implementing or Executing Agencies on cancelled or closed projects; on occasion, the Agencies may be required to return cash to the GEF Trust Fund;[5] in such cases, the funds are returned in USD.

2. During any replenishment period, some resources previously set aside or committed by the Trustee for a particular use are subsequently cancelled. When this occurs, the Trustee records the cancellation upon receipt of notification from an Agency or the Secretariat, as applicable. These cancellations include any of the following:

- Amounts associated with dropped projects or activities;
- Amounts associated with CEO endorsement (i.e., reduction of the initial amount approved by the Council); and
- Unused amounts from closed projects or activities.

[5] Agencies are required to return funds to the GEF Trust Fund only when the Trustee does not have a liability to that Agency.

Annex 2. Funding Availability Status

GEF Trust Fund – Schedule of Funds Available
Updated as of August 31, 2009 (in USD millions)

	As of August 31, 2009		As of July 31, 2009	
		USD eq. a/		USD eq. a/
1. Funds held in Trust		**3,982**		**3,958**
a. Cash and investments	3,027		3,012	
b. Unencashed Promissory notes	954		947	
2. Restricted Funds		**296**		**291**
a. Deferred contributions in respect to the pro rata right	251		246	
b. Reserve to cover foreign exchange rate fluctuations	45		45	
3. Funds held in Trust with no restrictions (3 = 1 - 2)		**3,686**		**3,668**
4. Approved amounts pending disbursement		**3,500**		**3,500**
a. Trustee Committed	2,075		2,061	
b. Approved by Council but not yet CEO Endorsed	1,425		1,440	
c. Requested amounts for financing pending Council Decision c/	-		-	
5. Funds available to support Council or CEO funding decisions (5 = 3 - 4)		**186**		**167**

a/ Valued on the basis of exchange rates of August 31, 2009
b/ Valued on the basis of exchange rates of July 31, 2009
c/ Represents either semiannual work program presented to Council or Intersessional work program.

Annex 3. Methodology of the GEF-5 Reserve Calculation

1. The reserve calculation analysis was carried out based on the estimated risk of the projected GEF cash flows over the 16 quarters starting at Q4/2010 for the three replenishment scenarios for the GEF-5: at USD 3.13 billion, 5 billion, and 9 billion, combined with the expected remaining inflows and outflows from the GEF-4.

2. The analysis estimated the risk for actual cash flows to fall short of expected, at the spot rate, due to a change in exchange rates using a methodology similar to that used for computing the reserve for just one year; that is, simulating currency paths according to a random walk path generated using covariances over the last 14 years and computing the 5% worst case shortfall of the US dollar cash flow.

3. To calculate the additional interest rate reserve, an assessment of interest rate risk was conducted assuming a starting balance of USD 3 billion and an assessment of the combined risks at the 5% level of confidence assuming they are uncorrelated. The calculation of the interest rate reserve does not take into account the expected interest earned on the balance of the fund.

Hypotheses used

4. The analysis used currency and interest data as of July 31, 2009 as presented in Tables 2 and 3 below and considered the average duration of the fund to be 2 years over the period.

Table 2: Foreign Exchange Rates as of July 31, 2009

USD	1.00
EUR	0.70
GBP	0.60
JPY	94.68
SDR	0.64
SEK	7.19
NOK	6.12
DKK	5.22
CHF	1.07
NZD	1.51
CAD	1.08
AUD	1.20
CZK	17.92
CNY	6.83
INR	47.94
KRW	1228
PKR	83.21
ZAR	7.76
MXN	13.19

Table 3: Interest Rates as of July 31, 2009

3m rate	0.18%
2Y rate	1.11%
10y rate	3.48%

5. The covariance matrix is computed on quarterly data over the past 14 years; in particular, the annualized volatilities a represented in Table 4 below.

Table 4: The Annualized Volatilities

AUD	11%
CAD	6%
EUR	10%
GBP	7%
JPY	12%

6. The methodology used relies on the assumption that currencies and interest rates behave like a random walk. Other methodologies and changes in hypotheses used may give different results. For example:

a. using historical variations over the past 30 years, the reserve calculation would be 15% higher;

b. using the drift implied by forward exchange rates, in the case they imply a lower exchange rate, would result in a reserve that is 7% higher, and 15% lower if all currencies drift according to their forward rate over 4 years.

7. For indicative purposes, the size of the foreign-exchange-only reserve was assessed for a shorter period. The results are presented in Table 5 below.

Table 5: Alternative Levels for Foreign Exchange Reserve

Scenario	3,131	5,000	9,000
Year 1	42	62	92
Year 1-2	107	155	250
Year 1-3	192	280	480