

*f*CPR

Forest Conservation
Performance Rating for the Pan-Tropics

Report 3:
New Grounds for Cautious Optimism

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Summary

This report updates CGD's Forest Conservation Performance Rating, a system of color-coded ratings for tropical forest conservation performance that can be implemented for local areas, countries, regions, and the entire pan-tropics. The ratings reward tropical forest conservation in three dimensions: (1) Progress toward elimination of tropical forest clearing by 2050; (2) progress toward achieving more ambitious REDD+ goals; and (3) achieving an immediate reduction in forest clearing. We assign Green ratings to areas that meet condition (2); Yellow to areas that meet (1) only; Dark Red to areas that fail both conditions, with forest clearing still increasing; and Light Red to areas that fail both conditions, but with declining forest clearing

We have developed **fCPR** at the Center for Global Development (CGD), using biweekly forest clearing indicators from FORMA (Forest Monitoring for Action). In this report, we expand coverage to 89 tropical forest countries, 1,096 of their states and provinces, and 12,636 of their sub-provinces and municipalities. We also combine the **fCPR** country ratings to produce ratings for major regions and the entire pan-tropics.

Overall, we find that conservation performance has deteriorated significantly since 2005, but recent changes provide some grounds for cautious optimism. Our previous report highlighted the rapid growth and spread of forest clearing during the initial recovery from the global economic crisis. The current report highlights improvements from Q3 2012 to Q2 2013. During this period, new forest clearing has declined in many countries. Our global indicator is still higher than its level before the economic crisis, but the gap has narrowed significantly.

Along with this encouraging trend, we should note improvements at the state/provincial level that have been scored by Brazil, Indonesia, and other major forest-clearing countries. These provide reminders that appropriately-focused, effective implementation of local policies can reduce forest clearing significantly. We hope that the **fCPR** ratings, and FORMA itself, will contribute by monitoring progress toward this goal, and by indicating problem areas where focused attention may promote more rapid progress. We will publish frequent updates on CGD's website (<http://www.cgdev.org>) and inform subscribers to our newsletter at http://www.cgdev.org/section/topics/climate_change/newsletter_archive.

1. Why We Developed *fCPR*

fCPR* (Forest Conservation Performance Rating)**, developed by the authors at the Center for Global Development (CGD), mobilizes the latest forest monitoring technology to produce frequently-updated conservation performance ratings for local areas, countries and regions in the pan-tropics. We have designed ***fCPR to support the mission of REDD+ (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) in three ways. First, ***fCPR*** directly promotes conservation by recognizing governments that protect their forested lands. Second, the system aids priority-setting by highlighting areas where forest conservation is lagging. Third, ***fCPR*** offers the global community an open-source, unbiased, frequently-updated view of global, regional and national progress toward achieving the goals of REDD+. Its ratings reward tropical forest conservation in three dimensions: (1) Progress toward elimination of tropical forest clearing by 2050; (2) progress toward achieving more ambitious REDD+ goals; and (3) achieving an immediate reduction in forest clearing.

We have developed ***fCPR*** using biweekly forest clearing indicators from FORMA (Forest Monitoring for Action). This report updates our ratings of conservation performance and expands coverage from 56 tropical forest countries to 89.¹ Coverage of states and provinces has expanded from 781 to 1,096. The appendix also provides ratings for 12,636 subprovinces and municipalities.

¹ We use the term "country" for expositional convenience. The *fCPR* ratings include several autonomous and semi-autonomous political entities as well (e.g. Taiwan China; Hong Kong China).

2. How *f*CPR Rates Tropical Forest Areas

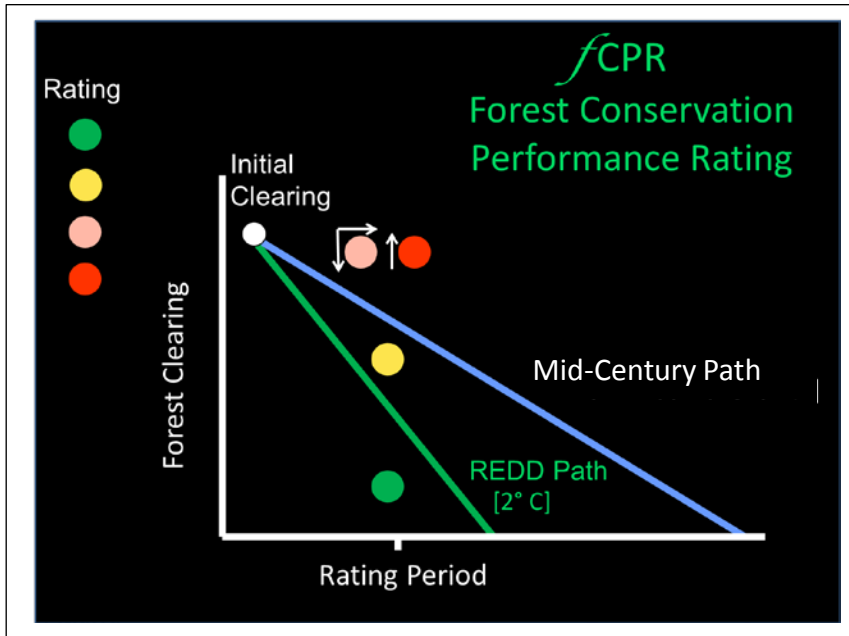
Rating performance requires benchmarks for judging progress. In REDD+ programs, a common benchmark is forest clearing during a previous period. We begin with a benchmark based on average forest clearing at two-week intervals during the first three years of FORMA coverage: 2006-2008.² Once the initial benchmark is set, we rate an area's progress relative to two paths that decline from the benchmark to zero clearing in 2050 and 2025, respectively. The moderate variant, which we term the "mid-century path", reflects a conservative view of potential progress. The steeper variant, or "REDD+ path", reflects the global community's recognition that we are unlikely to avoid a climate catastrophe unless carbon emissions plummet in the near future.

2.3 Rating Conservation Performance

Once the mid-century and REDD+ paths are established for the 89 countries tracked by FORMA, we assign quarterly performance ratings as illustrated in Figure 1.

² The average for each area is based on 70 observations.

Figure 1: Assigning Performance Ratings



We develop the ratings from 12-month moving averages (MA) of FORMA’s twice-monthly clearing indicators, to remove seasonal fluctuations.³ We further stabilize the series by calculating quarterly averages of the MA. Countries are Green if their quarterly averages are below their REDD+ lines. Green countries are on track to achieve zero clearing by 2025. We assign Yellow to countries whose quarterly averages are between their mid-century and REDD+ lines. Yellow countries will achieve zero clearing by 2050 if progress continues, but they are not yet on track to zero clearing by 2025. Finally, we assign Red to poor performers: countries whose quarterly averages are above their mid-century and REDD+ lines. To recognize incremental progress, we assign Light Red to countries where clearing is falling or stable, and Dark Red to countries where clearing is still increasing.

³ The moving average for a month is calculated from its clearing indicator and the indicators for the previous 11 months.

FORMA's biweekly database currently spans the period from January 1, 2006 to May 9, 2013. Using a three-year period (2006-2008) to set the initial benchmark for each country, we develop quarterly performance ratings for Q4 2008 - Q2 2013.⁴

3. fCPR Country Ratings

Table 1 presents color-coded ratings for the 89 countries, along with regional and global ratings.⁵ To aid interpretation, we include average quarterly clearing indicator values for Q4 2008 – Q2 2013 as a measure of relative scale. Figure 2 summarizes the country results, while Figure 3 provides geographic information.

The graphs in Figure 2 track general performance trends since 2005: Green for total countries that achieve Green or Yellow ratings; Red for countries that achieve Dark Red or Light Red ratings. The results reveal three phases since Q4 2008: (1) moderate deterioration in performance before the global economic crisis; (2) temporary reversal during the crisis; (3) significant deterioration during the recovery period, reaching an apparent plateau during the past year. Overall, Red countries increased from 53 in Q4 2008 to 60 in Q2 2013, while Green countries fell from 36 to 29.

Figure 3 displays geographic patterns for the first rating quarter (Q4 2008), the quarter that registered the maximum impact of the economic crisis (Q4 2010), and the final rating quarter (Q2 2013). Besides the overall decline in positive ratings since Q4

⁴ We use two months for the Q2 2013 rating; it will be extended to three months in the next update. The rating for Q4 2008 is based on the 12-month moving average for December, 2008. We have checked to see whether longer benchmark periods significantly affect country ratings, and they do not: The correlations between scores for 3-, 4- and 5-year benchmark periods are all 94% or higher.

⁵ To develop the summary ratings, we assign numerical scores to color codes as follows: Green (4); Yellow (3); Light Red (2); Dark Red (1). For a regional rating, we calculate each country's share of total clearing in the region during the rating quarter. Then we weight country scores by these shares; add the share-weighted scores; round the result to the nearest whole number; and assign the color associated with that number. For the global rating, we follow the same procedure with countries' scores weighted by their shares in total (89-country) clearing during the rating quarter.

2008, two features are striking: (1) The deterioration of Asian ratings, which is also clear in Table 1. Aside from two city-states (Singapore, Hong Kong) and small island states, the count for green ratings in Asia is 0 in Q2 2013. (2) The change in four southern-tier South American countries (Brazil, Bolivia, Paraguay, Argentina), which have all improved from Light Red to Green since Q4 2008.⁶

Reflecting the overall deterioration, the weighted global color rating in Table 1 has shifted from parity in the counts of Yellow and Light Red during the first 8 rating quarters to uniformly Light Red during the most recent 8 quarters. In Asia, a general trend toward Red was partially offset by Indonesia's achievement of a Green rating from Q3 2009 to Q3 2011. Since then, however, Indonesia has reverted to lower ratings and the regional rating has followed suit. In contrast, Latin America has remained Yellow since Q3 2009 because Brazil has been Green while performance in many other countries has remained poor. Africa has been Red for all 16 quarters, because its many Red-rated countries have much more clearing than its few Green-rated countries. In addition, the continent's Green country count has fallen from 7 in Q4 2008 to 4 in Q2 2013. Despite generally Green ratings, Oceania has been consistently Red because the Red-rated Comoros have far more clearing than the other islands.

When regional results are compared, it is clear why the global rating in Q2 2013 is Light Red: Latin America is Yellow, with a global indicator weight of 5,652, while Asia is Light Red (with weight 5,638), Africa Dark Red (weight 916), and Oceania Dark Red (weight 5). But Latin America only remains Yellow because Brazil, with an indicator weight of 3,618, remains Green. Without the massive counterweight of Brazil, the global rating would be Red.

⁶ Argentina has a small tropical forest area near the frontier with Bolivia.

Figure 2: Country Ratings, 2008 Q4 - 2013 Q2

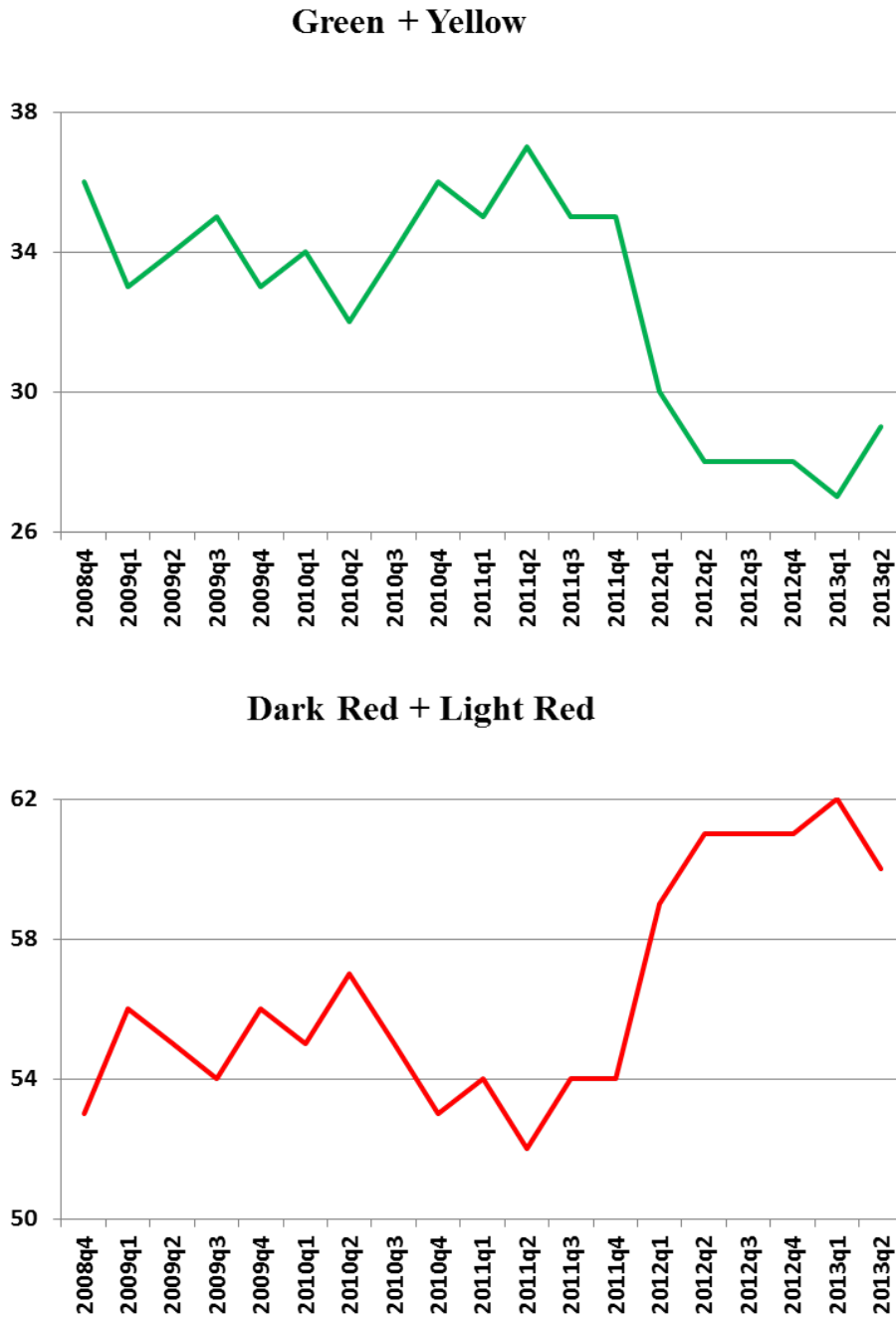
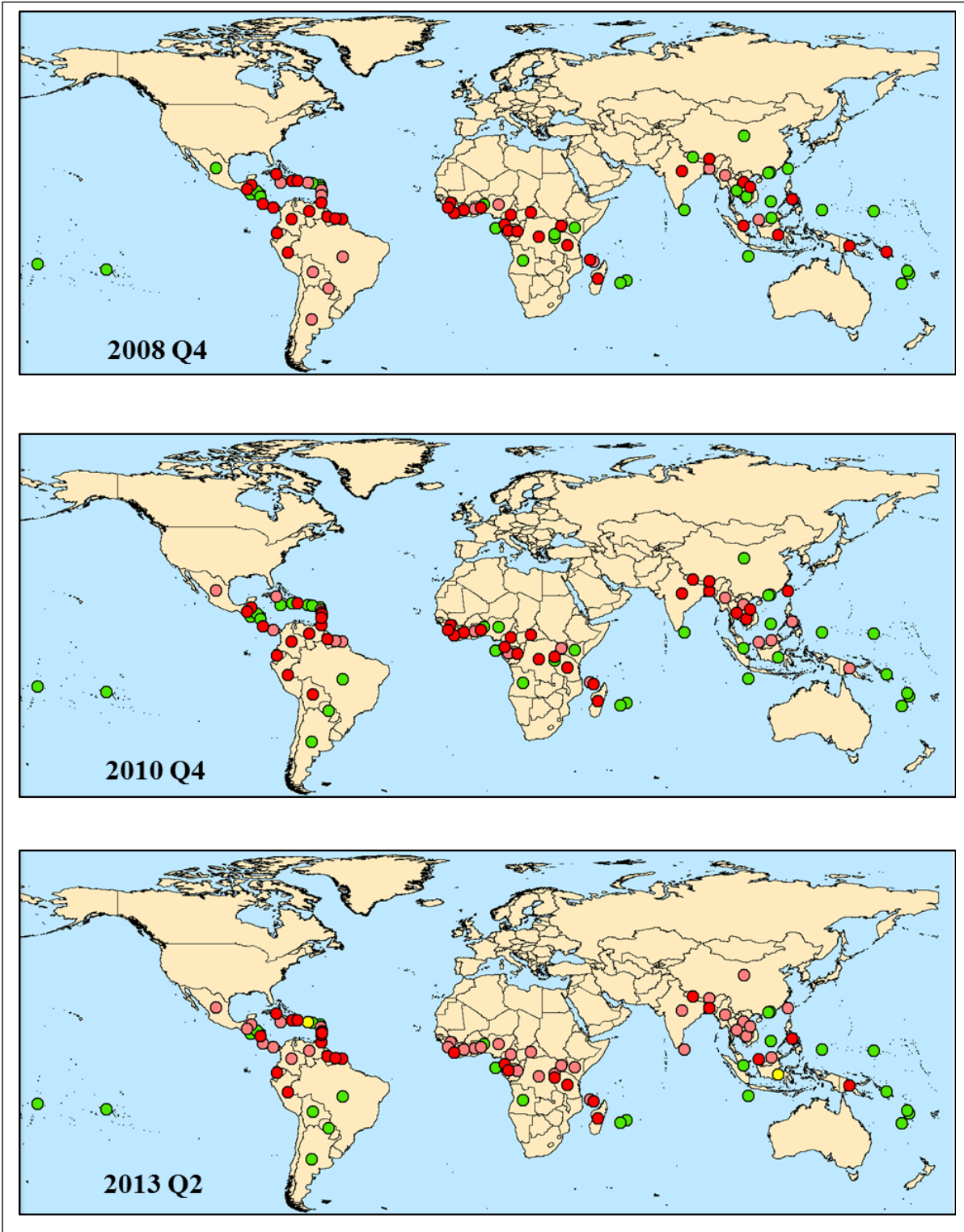


Figure 3: Country Performance Ratings



4. fCPR State and Province Ratings

Table 2 provides ratings for 1,096 states and provinces that contain tropical forest areas, while Figure 4 provides summary information for localities whose performance has been superior (Green or Yellow) or sub-par (Dark or Light Red). Here we see striking evidence of deterioration: Superior ratings fell steadily from 709 in Q4 2008 to 556 in Q2 2013, while sub-par ratings rose from 387 to 540.

Figures 5 and 6 offer more detailed views for South America and Southeast Asia, the two regions that dominate tropical forest clearing. In Figure 5 (and Table 2), the period from Q4 2008 to Q4 2010 was marked by the “greening” of the Brazilian Amazon and substantial areas of Bolivia and Paraguay, accompanied by the spread of Red areas in the rest of Brazil’s northern and western neighbors, along with southern Brazil. The period since then has featured westward expansion of the Amazonian Green region, some retraction of Green ratings in the Atlantic forest region, and a marked shift in neighboring countries from Dark Red to Light Red. On balance, Figure 5 indicates a marked improvement in South America since 2008 Q4.

Indonesia displays a highly-varied pattern in Figure 6 and Table 2. Among major forest-clearing provinces in Sumatra, Aceh and Sumatera Utara have been consistently Red, Riau has been consistently Green, and Sumatera Barat and Sumatera Selatan have varied widely. Kalimantan exhibits similar variation, with consistent Red ratings in Kalimantan Timur and Kalimantan Barat, consistent Green in Kalimantan Tengah, and deterioration from Green to Red in Kalimantan Selatan.

Figure 4: State/Province Ratings, Q4 2008 – Q2 2013

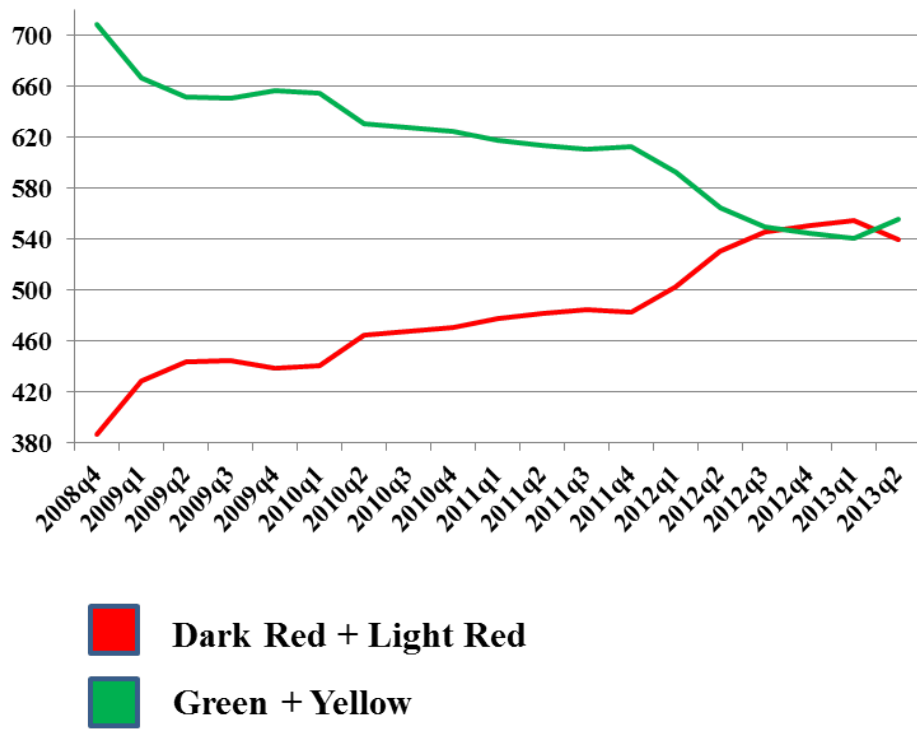


Figure 5: Provincial Performance Ratings, South America

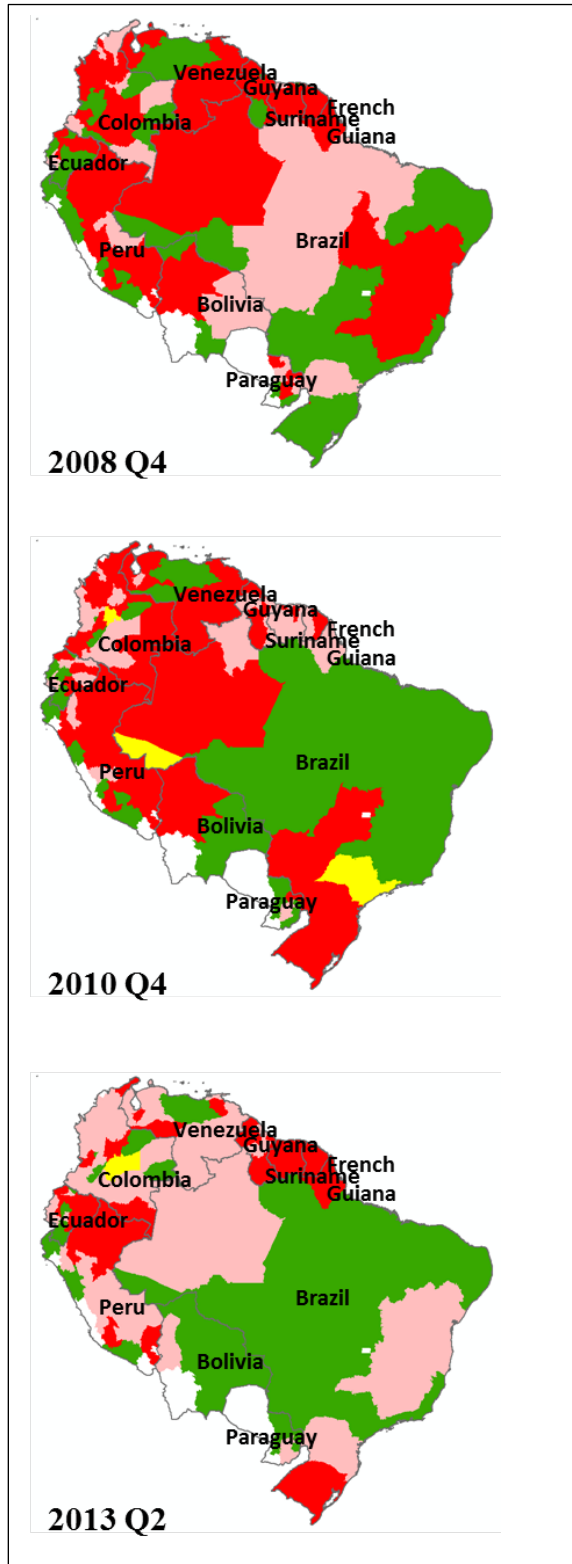
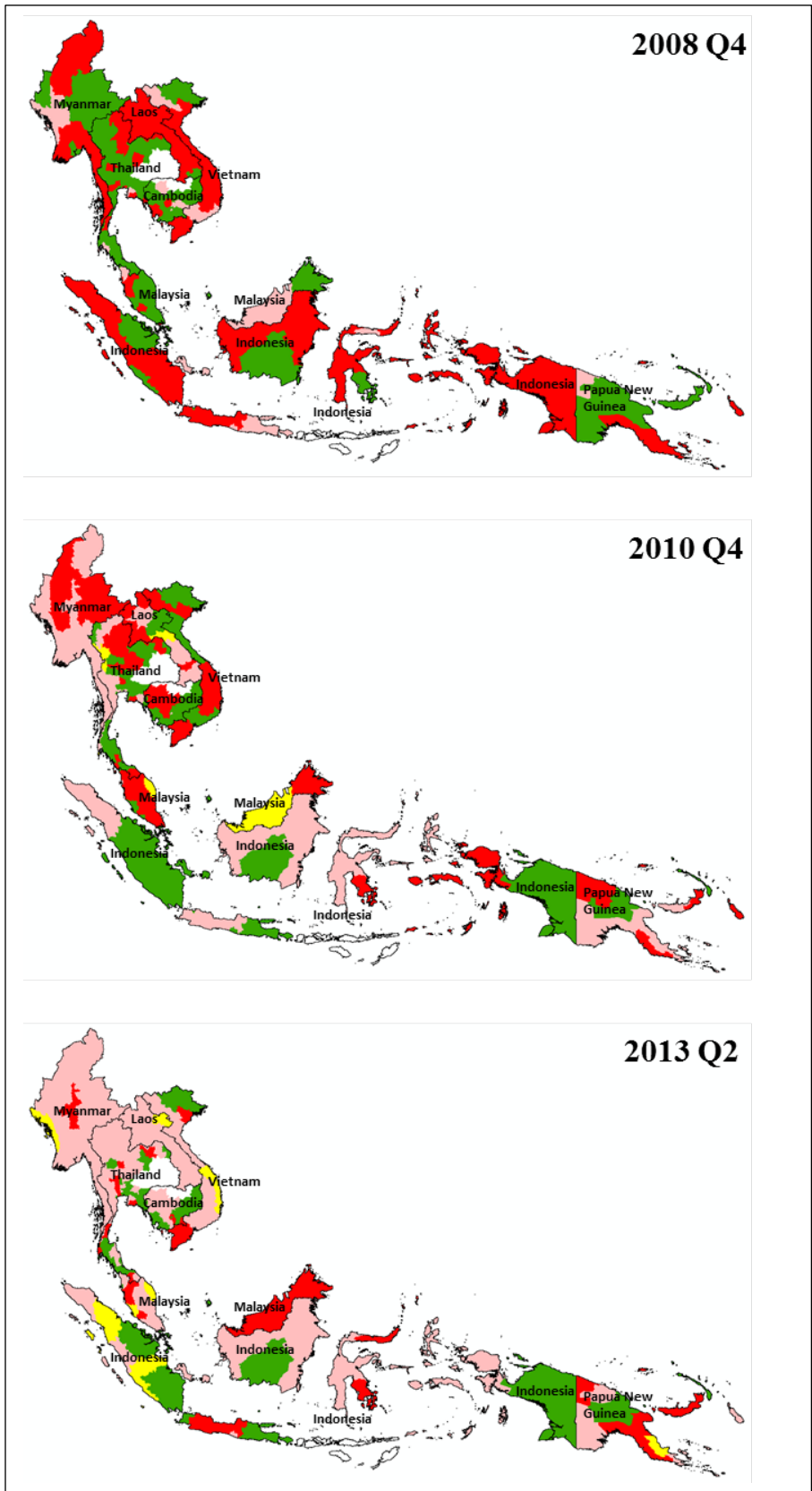


Figure 6: Provincial Performance Ratings, Southeast Asia



Elsewhere in Southeast Asia, Table 2 and Figure 6 reveal a steady pattern of deterioration. It was particularly evident in Myanmar, Malaysia and Papua New Guinea from Q4 2008 to Q4 2010, but by Q2 2013 the pattern has become quite general.

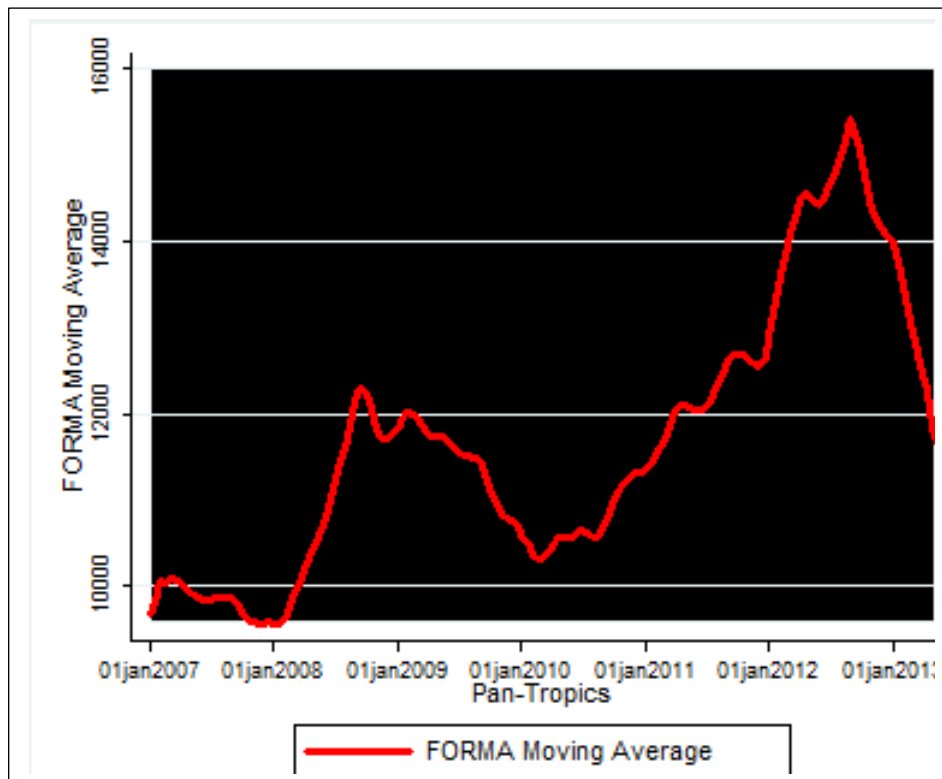
5. Summary and Conclusions

In this report we have updated *fCPR* (Forest Conservation Performance Rating), which now color-codes performance for 89 pan-tropical countries, 1,096 of their states and provinces and 12,636 of their sub-provinces and municipalities. We assign Green ratings when areas are on track to zero tropical forest clearing in 2025; Yellow when their progress is slower but consistent with zero clearing by 2050, and Red when they fail to achieve either benchmark.

Our results remain sobering: 60 countries are rated Red and only 29 Green or Yellow in Q2 2013, and many of the Green countries are small island states. We find a general pattern of deterioration since Q4 2008, with only Brazil retaining Green status among major tropical forest countries. And even within Brazil, a few states have moved from Green to Red during the past two years. Among Brazil's neighbors, the majority of states and provinces have been persistently Red since our first rating period. Indonesia has reverted to Red and Yellow after an extended Green period, and the rest of Asia has trended strongly Red. Africa has remained Red since Q4 2008.

Although the general trend is disappointing, we find some grounds for cautious optimism in the most recent data. Figure 7 displays the 12-month moving average of the global FORMA indicator from January, 2007 to May, 2013. It has passed through two clear cycles since 2007, with peaks in February, 2009 and August, 2012 and low points in February, 2010 and May, 2013.

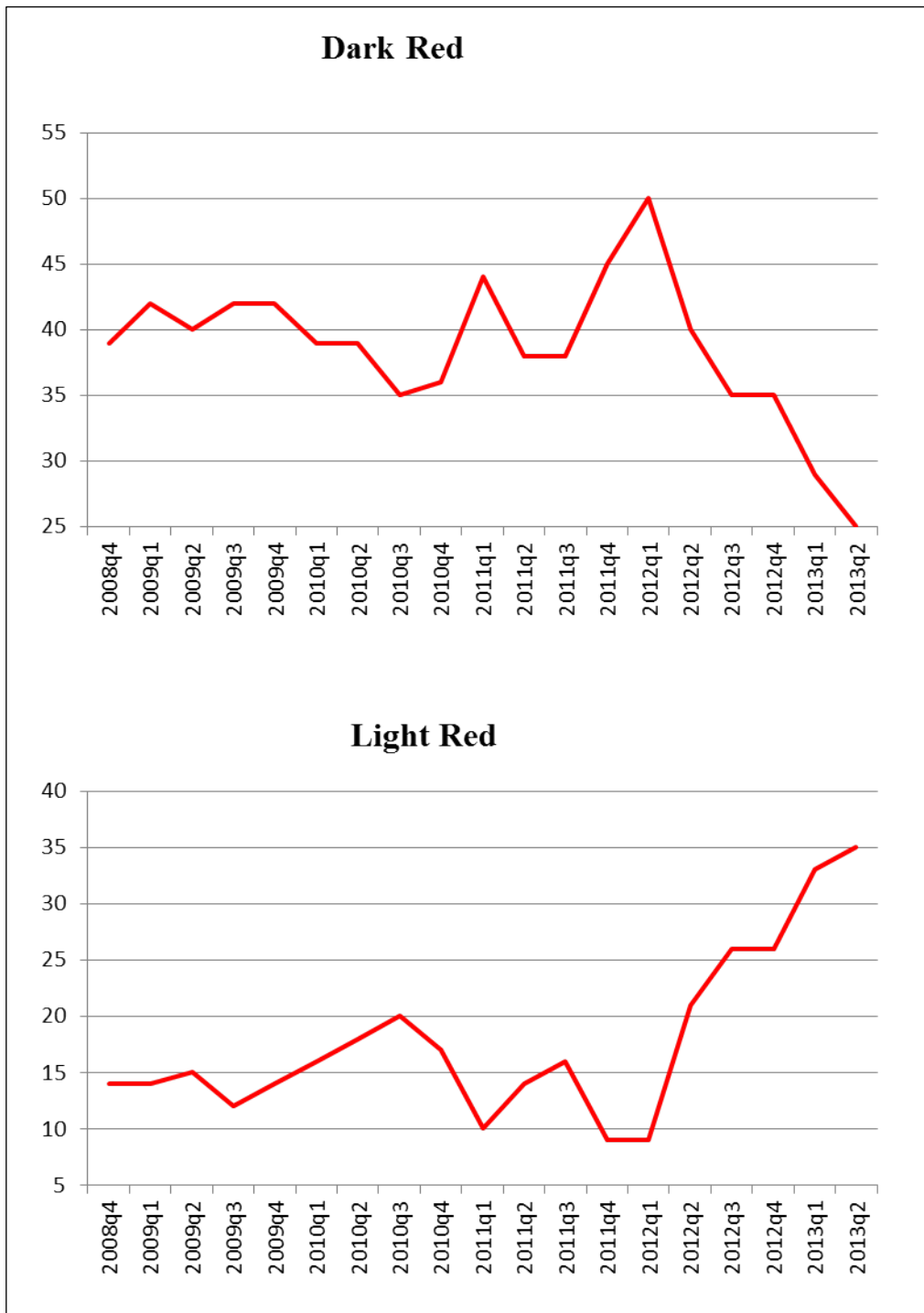
**Figure 7: FORMA Global Indicator, 2007 - 2013
(12-Month Moving Average)**



The recent decline in the indicator is encouraging, because our previous update (Wheeler, Hammer and Kraft, 2013) reported rapid growth of forest clearing during the first phase of the global economic recovery.

Figure 8 provides a more detailed view of the Red ratings that are summarized in Figure 2. In the latter figure, total Red ratings appear to have stabilized after a sharp increase during the initial global recovery period. However, Figure 8 shows that the stabilization of total Red ratings masks a sharp change in their composition, with a rapid drop in Dark Red and a compensating rise in Light Red.

Figure 8: Global Trends: Dark Red and Light Red Country Ratings



In Q1 2012, 50 countries were rated Dark Red (above the mid-century line and rising), while 9 were rated Light Red (above the mid-century line but falling). In Q2 2013 the situation is very different, with 25 countries rated Dark Red and 35 countries rated Light Red.

We also find some grounds for optimism in our evidence at the provincial level. Among the 1,096 provinces tabulated in Figure 4, 540 are rated Green in Q2 2013. And Figures 5 and 6 show that a significant number of localities have improved their ratings in South America and Southeast Asia. These positive developments provide reminders that appropriately-focused, effective implementation of local policies can reduce forest clearing significantly. We hope that the *f*CPR ratings, and FORMA itself, will contribute by monitoring progress toward this goal, and by indicating problem areas where focused attention may promote more rapid progress. We will publish frequent updates on CGD's website (<http://www.cgdev.org>) and inform subscribers to our newsletter at http://www.cgdev.org/section/topics/climate_change/newsletter_archive.

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		2008		2009				2010				2011				2012				2013	
Region/Country	Clearing Indicator	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
AFRICA	916.21																				
Angola	0																				
Benin	0.06																				
Burundi	0.45																				
Cameroon	15.4																				
Cent. Afr. Rep.	0.3																				
Cote d'Ivoire	49.64																				
DR Congo	111.38																				
Equatorial Guinea	3.47																				
Gabon	6.3																				
Ghana	20.91																				
Guinea	63.55																				
Kenya	1.79																				
Liberia	129.49																				
Madagascar	21.1																				
Nigeria	250.3																				
Republic of Congo	5.66																				
Rwanda	0.94																				
Sao Tome and Principe	0																				
Sierra Leone	157.39																				
South Sudan	0																				
Tanzania	53.92																				
Togo	3.8																				
Uganda	20.34																				

Region/ Country	State/Province	Clearing Indicator																				
			Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Thailand	Rayong	0.3317	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Sa Kaeo	0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Sakon Nakhon	0.0342	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Samut Prakan	0.0779	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Samut Sakhon	0.0802	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Samut Songkhram	0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Saraburi	0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Satun	0.3227	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Sing Buri	0.0092	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Songkhla	2.5751	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Songkhla (Songkhla Lake)	0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Sukhothai	0.2796	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Suphan Buri	0.0751	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Surat Thani	4.428	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Tak	1.3119	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Trang	2.288	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Trat	0.6897	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Udon Thani	0.4136	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Uthai Thani	0.0478	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Uttaradit	1.0718	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thailand	Yala	0.6233	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	Central Highlands	66.2273	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	Mekong River Delta	2.7811	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	North Central Coast	272.8384	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	North East	1.8706	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	North West	14.3788	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	Red River Delta	2.7284	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	South Central Coast	4.3928	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Vietnam	South East	0.5969	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

LATIN AMERICA, CARIBBEAN

