June 4, 2016

Jason Gray
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

RE: Comments on California's proposed REDD program and linkage with Acre, Brazil

FROM: Barbara Haya, Research Fellow, Berkeley Energy & Climate Institute, University of
California, Berkeley

Dear Mr. Gray,

Thank you for the opportunity to provide comments on California's proposed REDD program and
linkage with Acre, Brazil, and also for your hard work developing the program. Please find my
comments below, with recommendations in bold. Please do not hesitate to contact me with
questions or requests for further information.

SETTING A CREDITING BASELINE CONFIDENTLY BELOW BAU

**Past deforestation rates do not accurately predict future deforestation rates. To avoid non-
additional crediting, ARB's review of the proposed REDD program should find that without
future jurisdictional own effort, it would be very unlikely for forest carbon loss to be below
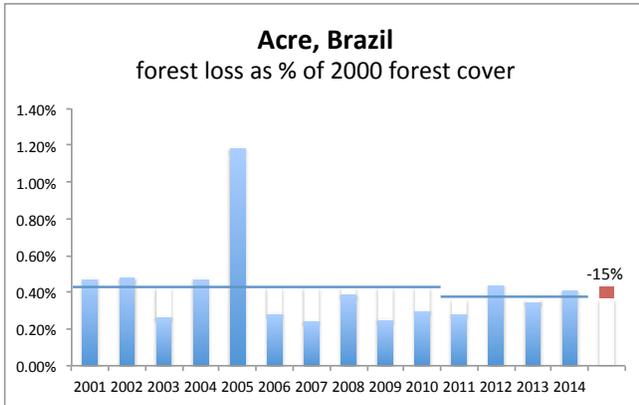the crediting baseline.**

Given the range of global and local factors influencing deforestation rates in different regions,
resulting in large annual and decadal fluctuations in deforestation rates in all GCF jurisdictions,
future BAU deforestation rates are fairly uncertainty. ARB has established the requirement that any
uncertainty in estimating emissions reductions from activities participating in its cap-and-trade
program should be addressed with conservative factors and methods. Larger uncertainty requires
more conservative decisions to avoid non-additionality crediting.

The risk of non-additional crediting can be separated into two sources: (1) annual fluctuations in
deforestation rates around the business-as-usual (BAU) average, and (2) uncertainty in the BAU
average. ARB's decision to fully account for reversals (forest carbon loss above the crediting
baseline) avoids the generation of non-additional credits due to annual fluctuations of deforestation
rates around the BAU average (see comments I submitted in response to the October 28, 2015
REDD workshop for a full analysis supporting ARB's choice to fully account for reversals.)

I discuss here the risk of non-additional crediting caused by uncertainty in the BAU average. Using
deforestation rate data from Global Forest Watch, I probe how predictive a ten-year average
deforestation rate (2001-2010) is of deforestation rates in the following period (2011-2015). I do this
analysis on 102 subnational jurisdictions that are home to the majority of the world's tropical
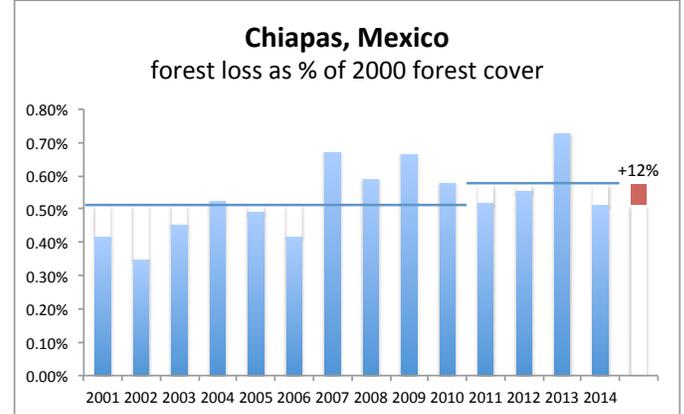
rainforests—states/provinces/regions/departments of the Amazon, Congo Basin, Indonesia, and Mexico. Below are graphs of these results for Acre, Brazil and Chiapas, Mexico.

Figure 1

Acre, Brazil
forest loss as % of 2000 forest cover

Figure 2

Chiapas, Mexico
forest loss as % of 2000 forest cover

Source: GFW

Figures 1 & 2 visually show what this analysis means. In Acre, according to this dataset (which measures deforestation differently from the Brazilian PRODES dataset used to calculate Acre's proposed crediting baseline), average deforestation rates during 2011-2015 are 15% lower than the 2001-2010 average. In Chiapas, deforestation rates are 12% higher.

Table 1, appended to these comments, presents the results for all 102 jurisdictions, ordered from the greatest drop in deforestation rates to greatest increase between these two periods: 2001-2010 and 2011-2014.

The range of change in deforestation rates during those two periods is very wide, from a drop of 50% in Mato Grosso, Brazil to an increase of 291% in Sud, Cameroon. Thirteen of these jurisdictions show a drop in deforestation rates by greater than 10%. This means that if these jurisdictions had implemented a REDD program in 2011 with a crediting baseline equal to 10% below the average rates during the previous 10-years they would have generated credits without taking further action (non-additional crediting). Certainly the reductions experienced in some of the thirteen jurisdictions, including those in Brazil, were a result, in full or in part, of domestic and state-level efforts to reduce deforestation. Even so, the number of jurisdictions with lower deforestation rates indicates a risk of non-additional crediting if ARB only looks at the numbers.

Setting a crediting baseline at 10% below the 10-year historical average is not sufficient on its own to avoid non-additional crediting. To avoid non-additional crediting, ARB's review of the proposed REDD program should find that without future jurisdictional own effort, it would be very unlikely for deforestation rates to be below the crediting baseline.

ACRE's CREDITING BASELINE

Acre's proposed crediting baseline should be lower to avoid non-additional crediting

Acre has proposed a crediting baseline of 496 km^2 of forest loss per year, the ten-year average deforestation rate during 2001-2010 (see Figure 3). This rate does not seem to be low enough to confidently avoid non-additional crediting. During the 28-year period from 1988 to 2015, major deforestation spikes occurred in four years—1995, 2002, 2003, and 2004. The 2001-2010 period proposed for the crediting period includes three of those four spike years. The proposed crediting baseline rate is higher than the average deforestation rates during 1988-2001 when the large spike in 1995 is excluded and six percent below that average including the large spike (see Figure 3). Future rates should be lower than past rates due to the influence of the Greenpeace led soy and beef moratoriums and lasting effects of federal policies already implemented. This implies that there is a reasonable chance that future BAU deforestation rates will be below 496 km^2/y. Further, Norway has agreed to provide funds to Acre, Brazil, through 2021 as payment for reductions in deforestation rates achieve (results-based payments).[1] Norway's funds should help pay for some of Acre's own efforts to reduce deforestation and should not be double counted with California's payments.

Figure 3

Source: Brazilian PRODES data http://www.obt.inpe.br/prodes/index.php
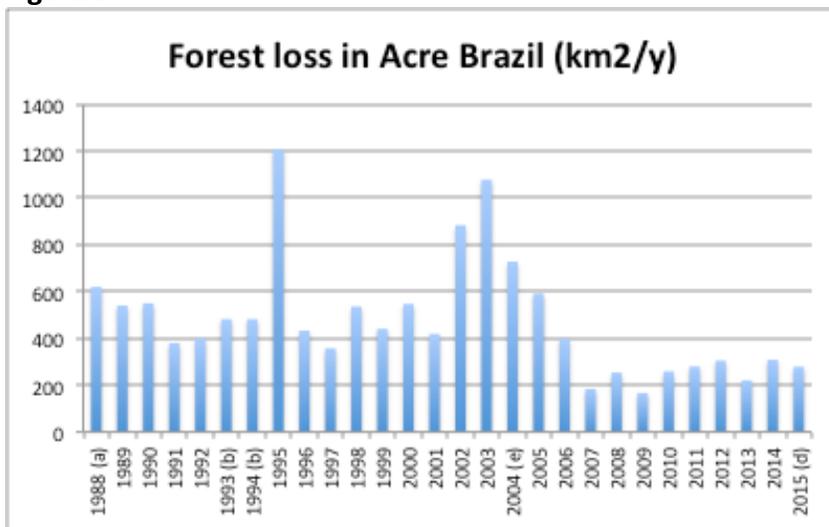
Setting the crediting baseline very close to the average rate during 2006-2015 (266 km^2/y) rather than at the 2001-2010 average is more likely to be sufficiently low to avoid non-additional crediting and reflect jurisdictional "own action." Such a baseline would represent a past average understood to be lower than what would have happened without domestic action. Maintaining deforestation rates close to 266 km^2/y should require continued governmental action. Setting a level that is confidently below BAU avoids the risk of non-additional crediting, reflects some ongoing own-action, rewards the deep reductions needed to drastically slow and eventually halt deforestation rather than just postpone it, and would meet an equivalence assessment (see section below on equivalence).

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[1] Birdsall, N., W. Savedoff & F. Seymour. 2014. The Brazil-Norway Agreement with Performance-Based Payments for Forest Conservation: Successes, Challenges, and Lessons. CGD Climate and Forest Paper Series #4

REDD CREDITS DON'T MEET THE ADDITIONALITY REQUIREMENT IN AN OFFSETS SENSE

AB 32 defines additionality of an offset credit thus: "the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur."[2] Offsets allow an emitter covered under an emissions cap to reduce emissions outside of the cap in lieu of reductions under the cap. The emitter must *cause* emissions to be reduced outside of the cap through the credit purchase for the resulting credits to "offset" emissions that otherwise would have been reduced under the cap.

A REDD program linkage is unlikely to meet the additionality requirement in the offsets sense of additionality because it would be very difficult to show that California's REDD program causes reductions in deforestation in the linked jurisdiction. First, too many factors affect deforestation rates. For example, in Brazil, reductions have been affected by the soy and beef moratoriums catalyzed by international NGOs, national Brazil policy, state-level policy and programs, and changes in global commodity prices (Nepstad et al. 2014). It is difficult to assess the extent to which deforestation rates were affected by any one of these factors. Second, the Brazilian government and Acre have decided to make forest protection a priority for a range of reasons, not just for the global climate benefits. Brazil has also committed to reducing its deforestation rate as a part of its commitments under the UN Paris climate accords (in their INDC). They are also receiving funds from governments internationally to help pay for these efforts, including from Norway as mentioned above. An effective REDD program is hard to carry out and requires substantial political will to be successful. The sale of REDD credits can help pay for, and provide legitimacy for, a government to carry out a program they wish to carry out. But if those payments are the main motivation for a REDD program, that REDD program is bound to fail; the political will would not likely be sufficient for an effective REDD program that preserves forests for the long run rather than just lowering emissions for a short period of time. For all of these reasons, **REDD credits would not be considered additional as offset credits. Income from REDD credit sales would support state efforts, but the causal link between California's REDD program and the reductions achieved cannot confidently be made.**

EQUIVALENCE

ARB's choice to link with Acre puts its REDD program in a linkage space rather than an offsets space. This is necessary because the program would not pass the additionality requirements for offsets credits, as described just above. There has never been a linkage between an industrialized and a developing jurisdiction (an Annex 1 jurisdiction and a non-Annex 1 in UNFCCC parlance). So California is forging ahead into new territory.

For evaluating *equivalence*, it helps to note some important characteristics of a linkage between economy-wide cap-and-trade programs like California's and Quebec's:
1. California and Quebec both have legally binding caps; both jurisdictions are buying and selling credits, not just selling credits.

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[2]   Cal. Health & Safety Code § 38562(d)(1)-(2)

2. Both targets are ambitious; net credit sales from one jurisdiction to the other will only occur if the ambitious reduction target is achieved and exceeded. Trading is viewed primarily as a way to facilitate joint achievement of the targets, rather than as a source of revenues for reductions below the target.
3. Fundamentally, emissions reductions from any one jurisdiction do little to mitigate global climate change; jurisdictions adopt emissions targets to encourage other jurisdictions to accept comparable commitments.
4. California's and Quebec's targets and policies to meet those targets are expected to be permanent reductions in a progression towards the long-term deep reductions needed to keep global temperatures below a two degree increase. If either jurisdiction abandons their efforts and lets emissions rise again it would break from the fundamental purpose of the agreement – long-term cooperative action towards the deep reductions needed to avoid a temperature increase above two degrees Celsius.

One important difference between the California-Quebec linkage and this proposed REDD linkage is that the REDD linkage is between two jurisdictions with substantially different levels of wealth and responsibility for causing climate change, (with "common but differentiated responsibilities and respective capabilities" in UNFCCC parlance). Distinctions between who should reduce and who should pay for those reductions have been a central point in discussions about equitable global climate change cooperation.[3] Common but differentiated responsibilities justify financial flows only in one direction (that California's cap is legally binding and Brazil is not). It also justifies that Acre should receive international support for some of the "own effort" part of its REDD program.

It is well accepted that Annex 1 jurisdictions have an obligation to both reduce their emissions AND support reductions in non-Annex 1 jurisdictions. A credit-generating REDD program creates a way for those two obligations to be traded-off for one another. Like with emissions trading, trading of two different obligations might make sense if sufficient targets are set for both. But under California's REDD program, California has only established a target for reducing its emissions, and not for providing REDD support.

If California cannot claim responsibility for causing Acre's reductions below the crediting baseline, what then justifies California avoiding reducing its emissions because Acre has reduced its deforestation rates below the baseline? In the linkage world, as discussed above, two jurisdictions take on targets, and decide to work together to lower the costs of meeting those targets for both parties, on a path towards deep long term reductions.

I don't aim to provide a complete answer as to what equivalence means between an Annex 1 and non-Annex 1 jurisdiction. California is wading into territory that has not yet been agreed under international climate change negotiations. But I do highlight several things that are clear. ARB in assessing the equivalence of a jurisdictional REDD program should only link to a REDD program if the following is true:

The REDD crediting baseline must be clearly below BAU and require substantial own effort to be achieved. With a linkage between Annex 1 and non-Annex 1 jurisdictions the non-Annex 1 jurisdiction would intend to reduce forest loss below the crediting baseline so that credits are

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[3]   See the Greenhouse Gas Development Rights as one carefully thought through analysis of how obligations can be equitably distributed, http://gdrights.org/, accessed May 19, 2016

generated, but the crediting baseline should be clearly and conservatively below BAU requiring own effort to be achieved. The efforts taken to reduce deforestation rates must start to move towards lasting changes that protect forests in the long run. They must address the main drivers of deforestation and not just the low hanging fruit that can slow deforestation temporarily. The jurisdiction must have demonstrated the capacity and motivation to reduce deforestation rates through the success of its existing REDD program. These should be criteria of the equivalence determination. Additionality in the offsets sense of the term (the purchaser reduces someone else's emissions instead of their own) is not confidently achieved with a jurisdictional REDD program. Equivalence in a linkage sense comes from the cooperative agreement to transform the economy towards ever deeper reductions in the sectors covered.

ARB, when reviewing a jurisdiction's REDD program for possible linkage, should only link to a jurisdiction if their REDD program meets the following criteria. The REDD program:
- **Has already achieved reductions**
- **Addresses the main drivers of deforestation**
- **Would lead to lasting changes to the forest sector and the economy in line with changes needed to substantially slow and eventually halt deforestation**
- **Uses a crediting baseline that requires substantial own effort**

The justification for these findings should be made publicly available.

LEAKAGE

ARB proposes two possible options for addressing leakage. The first option proposes to monitor whether the state continues to produce the same quantities of deforestation-driving commodities, such as beef, soy, palm oil and timber; if production decreases, the deforestation associated with producing those products elsewhere will be attributed to the REDD program. Here I raise a question – Deforestation rates fluctuate widely year-to-year. How well is the production of deforestation-driving commodities correlated with changes in deforestation rates? This ARB-proposed method of addressing leakage would only work if deforestation and the tracked deforestation-driving commodities are very well correlated; otherwise the leakage assessment may just be estimating noise rather than causation.

SOCIAL & ENVIRONMENTAL SAFEGUARDS

REDD is being considered for implementation in forest areas where people live, following, in most forested areas of the tropics, a long history of contested extraction and displacement and dispossession of communities living in the forests (Larson & Ribot 2007). When programs are implemented in the context of large imbalances in wealth and power, more likely than not, those who are better able to capture the program benefits will, at the expense of those less able to. So the outcomes of REDD projects and programs so far are not surprising.

Case studies from over the world have documented how REDD programs have lead to displacement and dispossession of forest communities, in Brazil, Cameroon, Ethiopia, Indonesia, Laos, Madagascar, Nigeria, Tanzania, Vietnam and elsewhere (e.g. Ingalls & Dwyer 2016, Corson 2011, Pokorny, Scholz & de Jong 2013, Kelly & Peluso 2015, Beymer-Farris & Bassett 2012, McElwee 2016, Asiyanbi 2015, Osborne, Bellante & Hedemann 2014). These studies and others

document how REDD policies often do not address the main drivers of deforestation but instead target small holders, which is politically easier. This has lead to restrictions of their traditional and livelihood uses of the forest, while REDD benefits go to larger players (e.g. Osborne et al. 2014, Ingalls & Dwyer 2016). Creating new conservation areas also often involves dispossession of forest communities (e.g. Kelly & Peluso 2015, Corson 2011). Even in Acre, indigenous communities have blamed the government for inadequate consultations, forced dispossession (restricted use of the forest for subsistence agriculture), and violence against those protesting the REDD program (Faustino & Furtado 2014).

Some of these studies describe jurisdictional REDD programs which involve multiple programs and government policy (Acre, Brazil; Cross River State, Nigeria) and some of these studies describe REDD projects of the type that are expected to be a part of an expanded jurisdiction-wide REDD strategy, like the establishment of conservation areas, or projects that pay farmers to change their land use practice. Therefore, the types of negative outcomes documented in these studies are relevant to California's proposed jurisdiction-scale REDD program.

Mandated social and environmental safeguards can improve program outcomes but often fail to avoid harm and achieve the listed requirements (prior and informed consent, etc.). This is due to the subjectivity involved in carrying out the policies and evaluating a project against the standards. The priorities and motivations of those carrying out the policies and evaluations have a larger influence on project outcomes than externally imposed standards. For example, the quality and outcomes of public consultations and prior and informed consent requirements have varied widely. It is easy to check the "public consultation" box by holding a publicly announced meeting, without effectively informing communities of what a project means to them, creating a meaningful discussion that airs and resolves differences, and incorporating stakeholder decisions into project decisions (World Bank 2000, Chambers). Poor-quality consultation is commonplace (e.g. McElwee 2016). The evaluation of social and environmental impacts, too, is often subjective, and it has been common for benefits to be exaggerated, and risks to be ignored in impact reports. This can partially be explained by the conflict of interest verifiers hired directly by project implementers have to provide a positive assessment to be hired again. Putting in place social and environmental safeguards is better than not doing so. Such safeguards give communities impacted by projects standards against which to protest projects. Though they have so far been insufficient to ensure that the standards are actually met.

ARB should:
1. **apply their evaluation of social and environmental safeguards to past forest and rural development programs rather than just to future promises. If forest projects and programs have involved violence, displacement without prior and informed consent, or harmful conflict, externally imposed safeguard policies are not an assurance against future harm.**
2. **conduct further research to understand the best standards to apply and the additional conditions that should be in place on the ground that would better indicate whether ARB's social and environmental goals will be met.**

ARB's PROCESS OF EVALUATING A JURISDICTION'S REDD PROGRAM

The quality of a program cannot be broken down into a bullet point list of requirements. ARB must thoroughly understand the history of forest policy and REDD efforts in the jurisdiction to assess whether there is an interest and capacity in adhering to the social and environmental safeguard principles, and to see if the program indeed addresses the major drivers of deforestation and reflects the changes to the land use sector necessary to slow down and bring an end to deforestation in a sustainable manner (without harming communities and bringing about other environmental impacts).

Gaining an understanding of the current and past REDD program and forest policy involves collecting information from a range of sources. ARB must find a way to do the following or should not take on the risks associated with linking with another jurisdiction's REDD program: Speaking to vocal opponents and supporters of REDD; Speaking to individual researchers from think tanks, academia and NGOs who have done field research on REDD in the specific jurisdiction and in other states/provinces in the same country; Speaking with individuals involved in REDD and forest policy from the state and local governments, local communities, and NGOs and to the individuals they recommend. It is my experience as a researcher that it takes multiple conversations with many people working in a sector from different vantage points to understand what is happening. And even though different people may have opposing claims, a cohesive picture does emerge. This work is not too difficult or time consuming, and is necessary before choosing to take the risks associated with linking with another jurisdiction's REDD program.

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Table 1 – How predictive are the 2001-2010 deforestation rates of 2011-2014 deforestation rates?
Average deforestation rates during the 2011-14 period are these percentages higher or lower than the average during 2001-10. (The figure of -50% for Mato Grosso means that the average deforestation rate in 2011-2014 is half of the average rate in the previous 10-year period.)

Brazil	Mato Grosso	-50%
Brazil	Rondonia	-46%
Brazil	Roraima	-38%
Colombia	Vichada	-35%
Indonesia	Sulawesi Utara	-31%
Colombia	Meta	-29%
CAR	Mambéré-Kadéï	-29%
Venezuela	Amazonas	-25%
Bolivia	Pando	-17%
Brazil	Acre	-15%
Indonesia	Maluku Utara	-12%
Ecuador	Zamora-Chinchipe	-11%
Mexico	Campeche	-11%
Indonesia	Central Kalimantan	-10%
Colombia	Guaviare	-9%
Mexico	Quintana Roo	-4%
Indonesia	Jawa Barat	-3%
Colombia	Guainía	-2%
Bolivia	La Paz	0%
Indonesia	Jambi	1%
CAR	Sangha-Mbaéré	3%
Venezuela	Bilovar	4%
Colombia	Caquetá	5%
Indonesia	Gorontalo	6%
Indonesia	Jawa Tengah	6%
Bolivia	El Beni	8%
Brazil	Amazonas	9%
Mexico	Tabasco	9%
Indonesia	Sulawesi Barat	10%
Brazil	Pará	10%
Brazil	Amapá	10%
Gabon	Ogooué-Lolo	11%
DRC	Kasai-Occidental	12%
Mexico	Chiapas	12%
Indonesia	Sumatera Utara	12%
Indonesia	Riau	12%
Colombia	Vaupes	14%
Indonesia	Nusa Tenggara Timur	15%
Indonesia	West Papua (Irian Jaya	16%

	Barat)	
Indonesia	Sulawesi Tenggara	16%
Brazil	Tocantins	19%
Indonesia	Sulawesi Tengah	20%
Indonesia	Lampung	20%
Indonesia	Sulawesi Selatan	20%
Indonesia	Bengkulu	21%
Indonesia	Sumatera Barat	22%
Gabon	Nyanga	23%
Colombia	Putumayo	28%
Venezuela	Delta Amacuro	28%
Indonesia	Maluku	28%
Indonesia	Nusa Tenggara Barat	28%
Guyana	(country-wide)	29%
Peru	San Martín	31%
DRC	Kasai-Oriental	34%
Indonesia	Bangka-Belitung	34%
Peru	Cusco	34%
CAR	Lobaye	36%
Republic of Congo	Kouilou	37%
Mexico	Jalisco	38%
Indonesia	Jawa Timur	38%
Gabon	Haut-Ogooué	40%
Brazil	Maranhao	41%
Ecuador	Sucumbios	42%
Peru	Amazonas	45%
French Guiana	(country-wide)	48%
Gabon	Ogooué-Ivindo	48%
Indonesia	Sumatera Selatan	48%
Colombia	Amazonas	52%
DRC	Kivu	54%
Indonesia	South Kalimantan	59%
DRC	Bandundu	62%
Indonesia	Aceh	65%
Republic of Congo	Likouala	68%
Peru	Madre de Dios	70%
Peru	Junin	71%
DRC	Orientale	72%
Ecuador	Orellana	73%
Republic of Congo	Niari	79%
Republic of Congo	Cuvette-Ouest	80%
Republic of Congo	Cuvette	82%
Indonesia	West Kalimantan	85%
Peru	Huanuco	85%
Indonesia	East Kalimantan	86%
Peru	Loreto	87%

Ecuador	Morona-Santiago	90%
Cameroon	Est	94%
DRC	Equateur	95%
Ecuador	Pastaza	99%
Gabon	Moyen-Ogooué	103%
Peru	Pasco	109%
Cameroon	Sud-Ouest	112%
Cameroon	Littoral	113%
Indonesia	Papua	116%
Peru	Ucayali	116%
Gabon	Ogooué-Maritime	120%
Suriname	(country-wide)	142%
Nigeria	Cross River State	145%
Republic of Congo	Sangha	154%
Gabon	Ngounié	164%
Equatorial Guinea	(country-wide)	174%
Cameroon	Centre	181%
Gabon	Estuaire	208%
Republic of Congo	Lékoumou	234%
Gabon	Wouleu-Ntem	247%
Cameroon	Sud	291%