

Protecting Liberia's Forest

Conservation for People and Planet

10 December 2015

This paper deploys geospatial analysis to approximate the costs associated with plans to allocate 30% of Liberia's forest estate to protected areas.

Liberia holds some of the last remaining, intact forests in West Africa and so reducing deforestation quickly and efficiently would be important in global climate change mitigation efforts. This paper aims to help by providing a rough sense of how many people might be affected by the protected area plans. It then examines evidence on compensation costs to give a sense of the budget that might be required if principles of Free Prior and Informed Consent (FPIC) are respected per Liberia's new Land Rights Policy.

The paper highlights some of the key factors that implementing organizations need to account for in their planning. Finally, we provide a short set of basic recommendations that might help to reduce costs and increase the speed of implementation. In particular, we emphasize means of reducing physical and economic displacement through supporting community conservation and enterprises, appropriate policy design, data-driven planning, and ensuring that Liberia's rural community landowners are partners in any conservation process.



I. Overview

Liberia's forests are important to global hopes of climate change mitigation. Initiatives that reduce deforestation and protect intact forests in Liberia may make a significant contribution to a prosperous and biodiverse future.

We therefore applaud the commitment, and ambition, of the World Bank and Norwegian government to this crucial effort. This ambition is clearly outlined in the Letter of Intent between Liberia and Norway¹, which states that a priority for action up to 2020 is:

[P]lacing 30% or more of Liberia's forest estate under protected area status in accordance with the National Forest Reform Law (NFRL) through a process that consults all relevant stakeholders and ensures that the Free, Prior, Informed Consent (FPIC) rights of individual, indigenous, forest dependent and local communities are respected.

This paper aims to help successful implementation of Liberian forest conservation programs by providing basic answers to three key questions:

- 1) How many people could be affected by the proposal?
- 2) How much might it cost to compensate these people?
- 3) What are the key factors to consider when planning implementation?

Given the urgency of the situation, it is imperative that we get this right from the start. This paper aims to help by deploying readily-available geospatial tools – specifically on population² and forest cover – to quantify the challenges that could arise.

The results of our analysis suggest that the costs of this program may soar. The proposed budget of US\$150 million may be severely stretched before we get to the longer-term concern of maintaining protected areas.³ Successful implementation will likely rely on avoiding economic as well as physical displacement⁴ through substantive engagement with the interests of local populations.

¹ <https://www.regjeringen.no/contentassets/b8b93fa03bda4ac893d065d26d64075b/letterofintentliberia.pdf>

² We are using Landsat for population (<http://web.ornl.gov/sci/landscan/>) and the University of Maryland for land cover (http://earthenginepartners.appspot.com/science-2013-global-forest/download_v1.2.html)

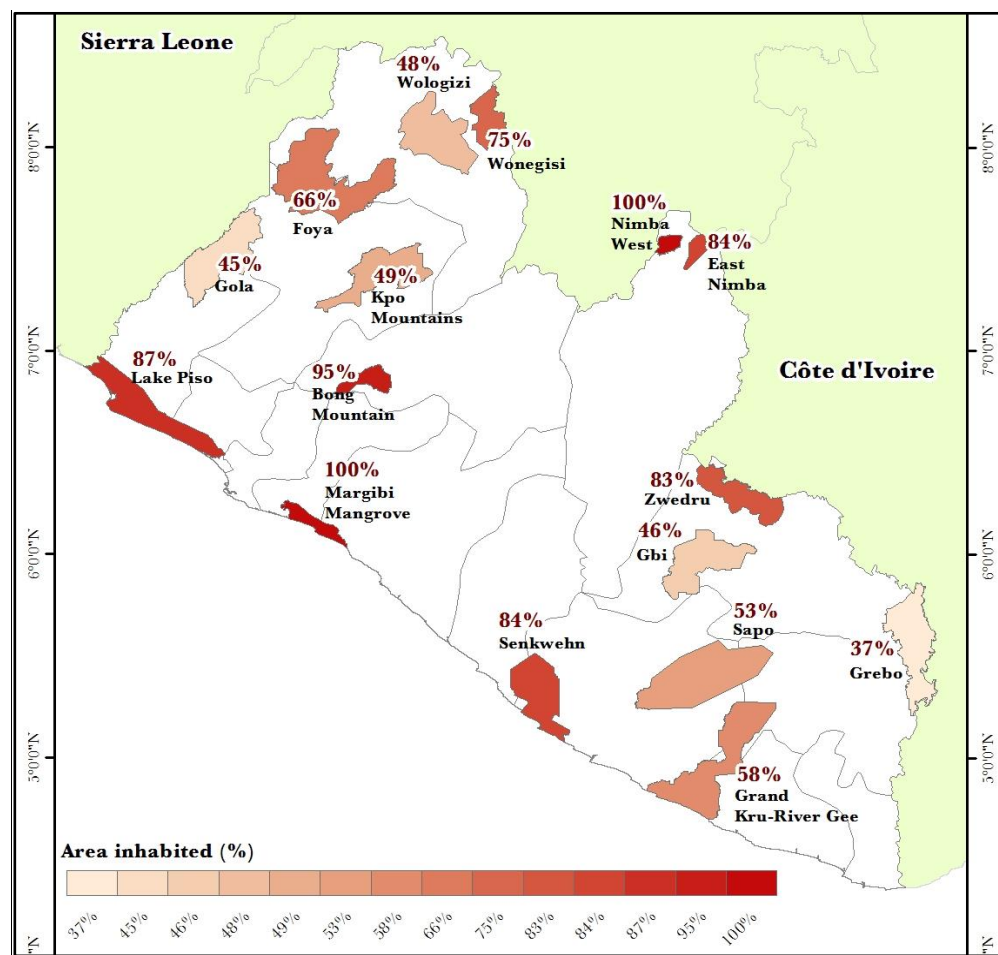
³ This investment is also intended to support the following activities: reviewing all logging concessions; building institutional capacity; piloting direct payments to forest communities; addressing the drivers of forest-related emissions; and developing reporting systems for carbon (<https://www.regjeringen.no/en/aktuelt/Liberia-and-Norway-launch-climate-and-forest-partnership/id2001145/>).

⁴ We understand that any physical displacement will be minimized as far as possible. However, protected areas may curtail livelihoods and opportunities, potentially creating considerable “economic displacement” and associated compensation costs.

II. How Many People Could Be Affected?

We can provide an approximate sense of the number of people living in Liberia's forests by using respected geospatial datasets on population (Landscan) and forest cover (University of Maryland).⁵ By deploying this data we can derive an estimated range for the number of people likely to be affected by proposals to allocate 30% of forest estate to protected areas.

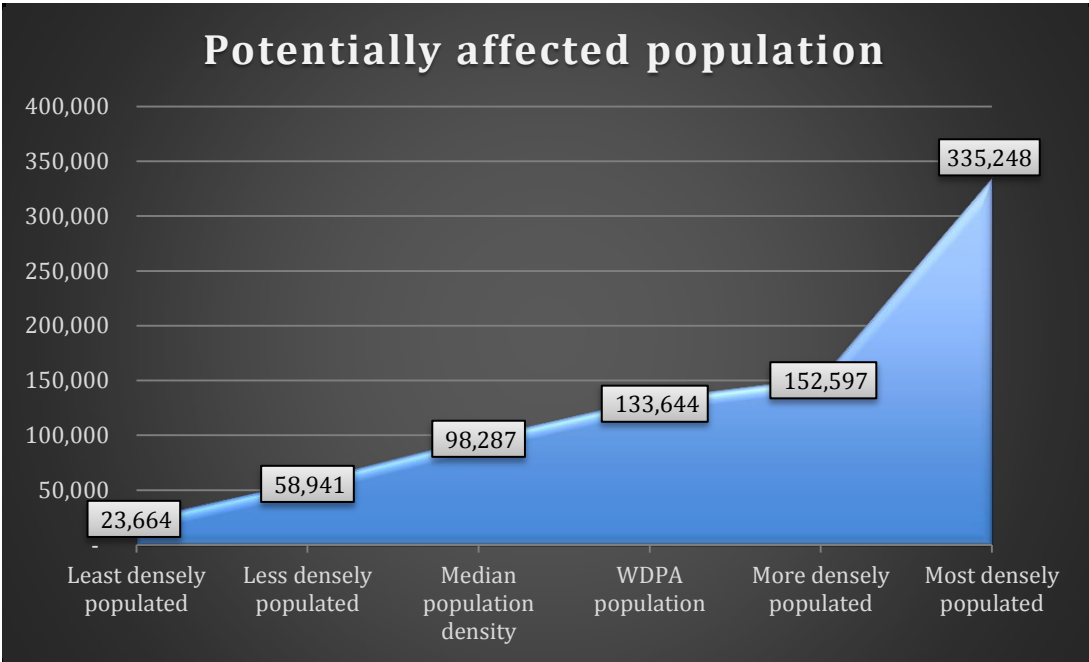
The major element of uncertainty in these affected population projections is the location of the protected areas. The map below displays the areas indicated as good candidates for protection status by the IUCN's World Database on Protected Areas (WDPA)⁶. It shows that all these areas are predominantly populated, indicating that significant numbers of people will be affected by the proposed expansion of protected areas (see Appendix for further detail on population).



⁵ We welcome plans, outlined in the Letter of Intent (<https://www.regjeringen.no/contentassets/b8b93fa03bda4ac893d065d26d64075b/letterofintentliberia.pdf>), to develop an enhanced geospatial database for Liberia. We are also aware that Metria is due to release mapping soon but at the time of writing this was unavailable to us.

⁶ https://www.iucn.org/about/work/programmes/gpap_home/gpap_biodiversity/gpap_wdpa/

The graph below provides more detailed estimates of the number of people who may live within the proposed protected areas. We give a range within 30% of the forest estate, from least to most densely populated, across five classes. In addition, we have used Landscan to estimate the population count in WDPA indicated areas.



The most revealing figure may be the WDPA population count which, interestingly, is higher than the median population density. This result means that it would be reasonable, at this point, to assume that the number of project affected people (PAPs) will be towards the middle of this range. As we see in the next section, compensating this number of people for economic, let alone physical, displacement would create considerable budgetary problems.

III. How Much Might It Cost?

Compensation varies according to the type of impact and prevailing local conditions. Given the scale of the proposed protected areas, a truly representative picture is hard to produce. But looking at resettlement costs⁷ in analogous projects can help us to develop a reasonable estimate of adequate compensation per project affected person (PAP).

The table below provides information on both physical and economic resettlement costs⁸ for a series of projects that are recent and local (further details of these cases and our analysis of them

⁷ We have chosen to focus on resettlement rather than broader compensation costs because the data is more reliable and more detailed.

⁸ Our definition of physical resettlement reflects World Bank’s Involuntary Resettlement Policy’s discussion of “relocation or loss of shelter”. Similarly we consider economic displacement to include “[loss] of assets or access to assets; or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location”

can be found in the Appendix). We understand that physical resettlement at scale can be avoided. However, considerable economic displacement seems to be significantly less avoidable under current proposals.

Name	Date	Project Location	Cost/PAP (physical)	Cost/PAP (economic)
Arcelor-Mittal tailings	2014	Liberia	N/A	\$6,637
Buchanan Highway	2012	Liberia	\$5,539	\$342
Sime Darby	2011	Liberia	N/A	\$632
Interconnection project	2010	Liberia (portion)	\$1,205	\$7,476
Bumbuna Hydroelectric	2008-2010	Sierra Leone	\$1,539	\$2,637

If we remove the obvious outlier (Sime Darby),⁹ there appears to be a relatively consistent range of total resettlement costs per PAP across a range of different projects.¹⁰ However, the distribution of economic and physical compensation varies.

In the case of the Buchanan Highway project, houses needed to be demolished but displacement of productive activities was limited. In contrast, the Interconnection project produced relatively low levels of physical displacement, with most PAPs compensated for the loss agricultural livelihoods. This case appears to be more analogous to the protected area proposals.

The Arcelor-Mittal case is also relevant. This is the most recent example we have and its pursuit of FPIC has been well documented.¹¹ Farmers were compensated for their loss of farmland, which might have been contaminated or inundated by a tailings reservoir. This demonstrates that livelihood displacement can be expensive even where the activity in question has no extraordinary value.

By combining the above figures with the estimates for the PAP count we can provide a rough sense of the possible distribution of compensation costs. While not everyone in a protected area will be physically or economically displaced, the below figures provide an indicative sense of overall costs.

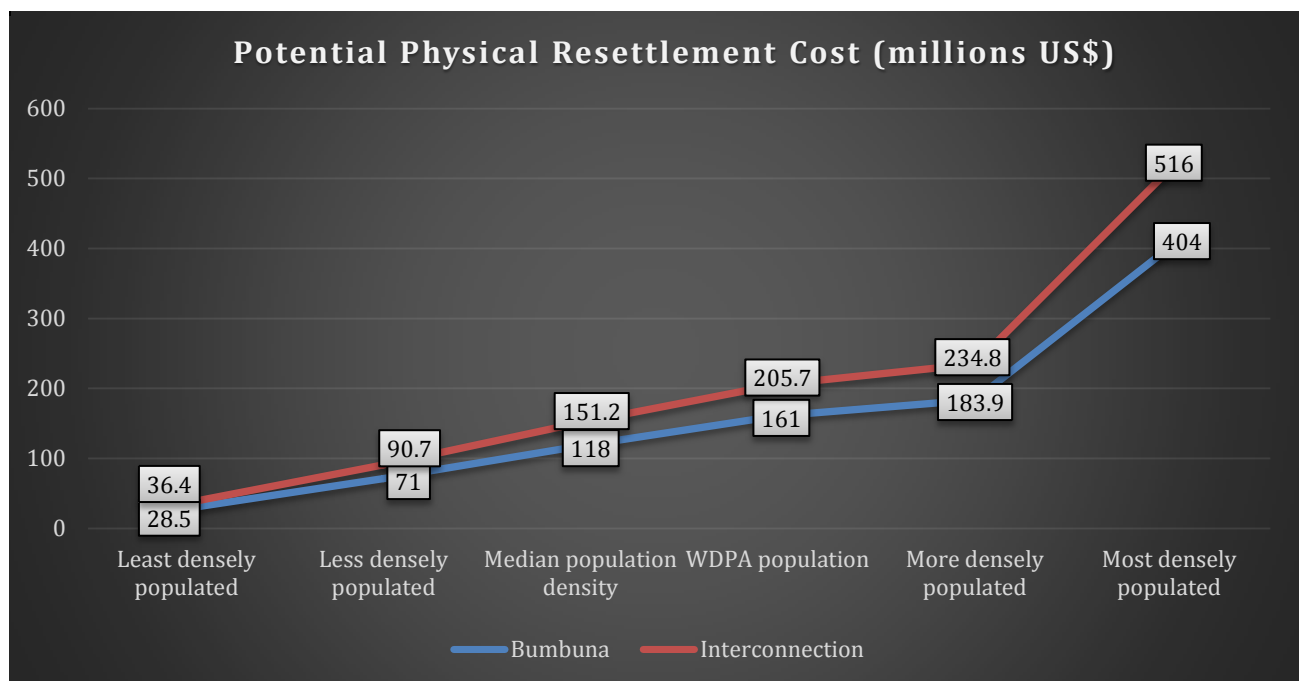
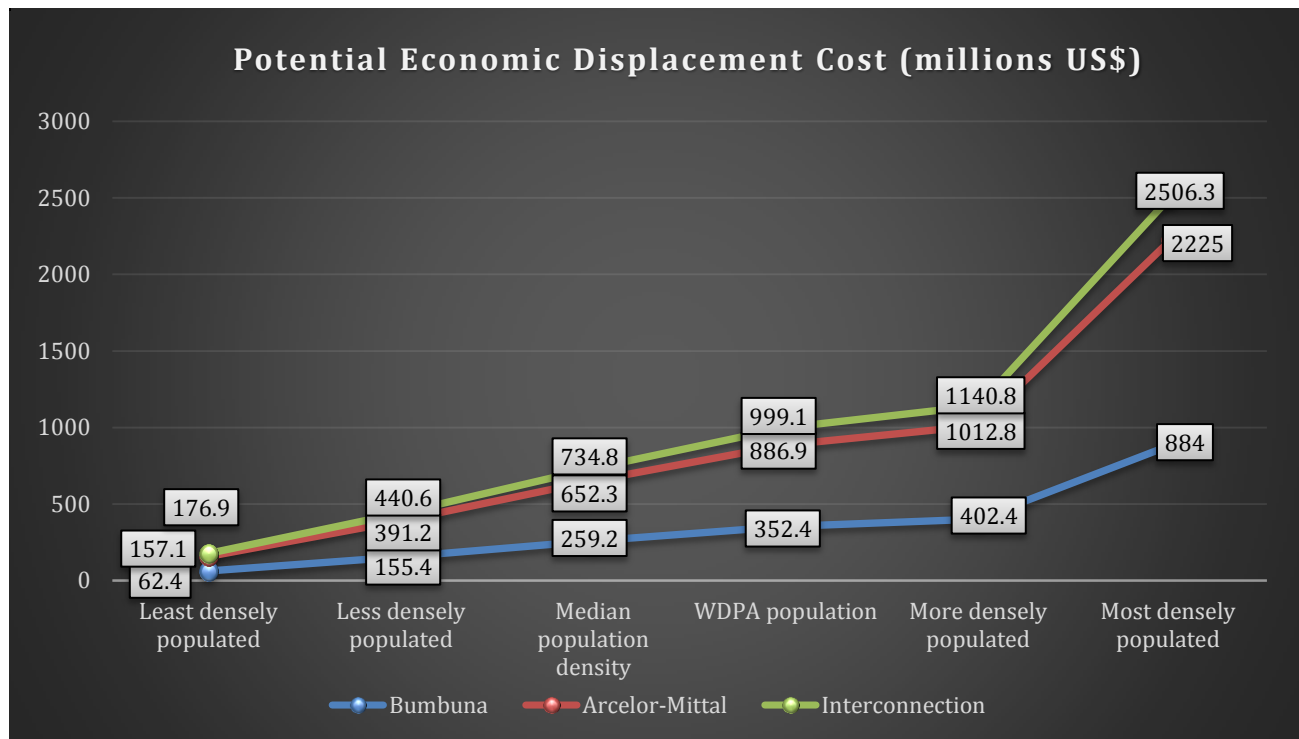
(<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0..contentMDK:20064610~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184~isCURL:Y,00.html>)

⁹ The figure for the Sime Darby case is low because they disputed the fact that they owed compensation, claiming they owned the land legally. As such they only provided “crop compensation” and did not meet the standards of FPIC.

¹⁰ In secondary literature we found recommendations from academics suggesting that those displaced from protected areas in Central Africa should be compensated to the tune of \$40,000 PAP. This appears unrealistic so we have chosen to be more conservative in our approach.

¹¹ While this process has been controversial the consensus view appears to be that it has been handled responsibly

These graphs show the potential cost if the same level of compensation PAP is provided as for the Bumbuna Hydro, Arcelor-Mittal, or Interconnection projects. We provide a breakdown across our six population classes for both economic and physical displacement.



Further investigation of two of these scenarios is instructive: the median population density and the WDPA population count. If everyone in each scenario was compensated for livelihoods as in Arcelor-Mittal's tailings project, the total cost would come to 4.3 times and 5.9 times the proposed budget of \$150 million.

If Arcelor-Mittal's standards are followed, the total budget (which, as we remember, is also intended for a suite of other activities) can compensate for 22,600 economically displaced people: less than a quarter of the median population density count and less than a fifth of the WDPA population count. This all assumes no physical displacement whatsoever and ignores a host of additional costs associated with establishing protected areas.

Reducing displacement to these levels may be feasible but it will depend on the ability of the implementing organizations to identify the right sites and then engage the people that live within them effectively.

IV. What Are The Key Factors To Consider When Planning Implementation?

Our cost projections are approximate and do not account for some significant factors. For example, it may be possible to reduce the number of PAPs significantly through careful design of the activities licensed in protected areas. Conversely, implementation may be complicated by issues stemming from social conflict or limited bureaucratic capacity.

We do not intend to model the impact of such factors here. Instead, we simply identify them to help with implementation planning. By taking proper account of these factors, the costs of the project can be moderated and the speed of implementation increased.

Ongoing Costs:

The proposed investment only covers the establishment of protected areas. It does not provide for the long-term maintenance of these areas. Given the size of the areas in question and the limited financial capacity of the Liberian state, this may undermine the climate change mitigation impact of the proposals.

A comparable protected area can, very conservatively, cost US\$1-3/ha/annum to maintain.¹² This would take maintenance costs for 30% of Liberia's forest land to a total of around US\$35-106 million over the period from 2020 to 2050. But the cost might be as much as three times higher than the top end of this range according to some commentators. It would be reasonable to view this as an unfunded liability for the Liberian government.

¹² Research indicates that the actual costs of running protected areas in Zambia was \$0.87/ha/annum but that the necessary spend should be more like \$6.28-10/ha/annum (<http://fsg.afre.msu.edu/zambia/resources/Economic%20Analysis%20of%20Protected%20Areas1%20%20zambia%20report.pdf>). Similarly, a global review of 196 protected areas (of which 126 were in Africa) suggested running costs of \$0.90-9/ha/annum (<http://bioscience.oxfordjournals.org/content/54/12/1119.full>).

Social Conflict

Perceived threats to livelihoods and homes can create obdurate opposition to project implementation. This kind of resistance can easily translate into significant delays. This risk of slippage underlines the importance of an effective local engagement process for rapid and low-cost implementation. Direct engagement with local conceptions of tenure rights and with local interests more broadly is the most effective way to identify and deal with disputes over land and resource rights.

Defining Protected Areas

The number of people that will be economically displaced by protected areas depends heavily on the activities that are licensed within them. Allowing the likes of community forest enterprises (CFEs) and smallholders to continue existing, low-impact economic activities, may considerably reduce cost and difficulty of implementation.¹³

Bureaucratic Capacity

Establishing protected areas in the allotted timeframe appears challenging given the fact that Liberia is still dealing with the bureaucratic challenge associated with the 2013 Land Rights Policy. The mapping and entitlement process associated with this important policy has created demands for which Liberia's bureaucracy was underprepared. It is hard to say how long the process will take and this uncertainty may carry over into the protected areas proposals.

Public Health Hazards

The establishment of protected areas could lead to significant migration. This becomes problematic in the light of the recent, tragic outbreak of Ebola, which was carried to cities along the lines of urbanization.

This kind of public health hazard naturally has a direct and diffuse impact on the efficiency of a large-scale initiative. But there is also a risk that response to the health problems could lead to a U-turn on policies, like expanding protected areas, that push people towards cities.

Recommendations

The approach we have used to estimate population counts and resettlement costs is approximate. We are simply providing a representative picture. This picture provides enough detail to suggest that the protected area proposals may be difficult to implement – and especially so given the new Land Rights Policy and proposed budget. The following recommendations are designed to help the proposals to achieve vital climate mitigation impacts:

- 1) Use geospatial tools to minimize physical and economic displacement through careful site selection and detailed implementation planning;

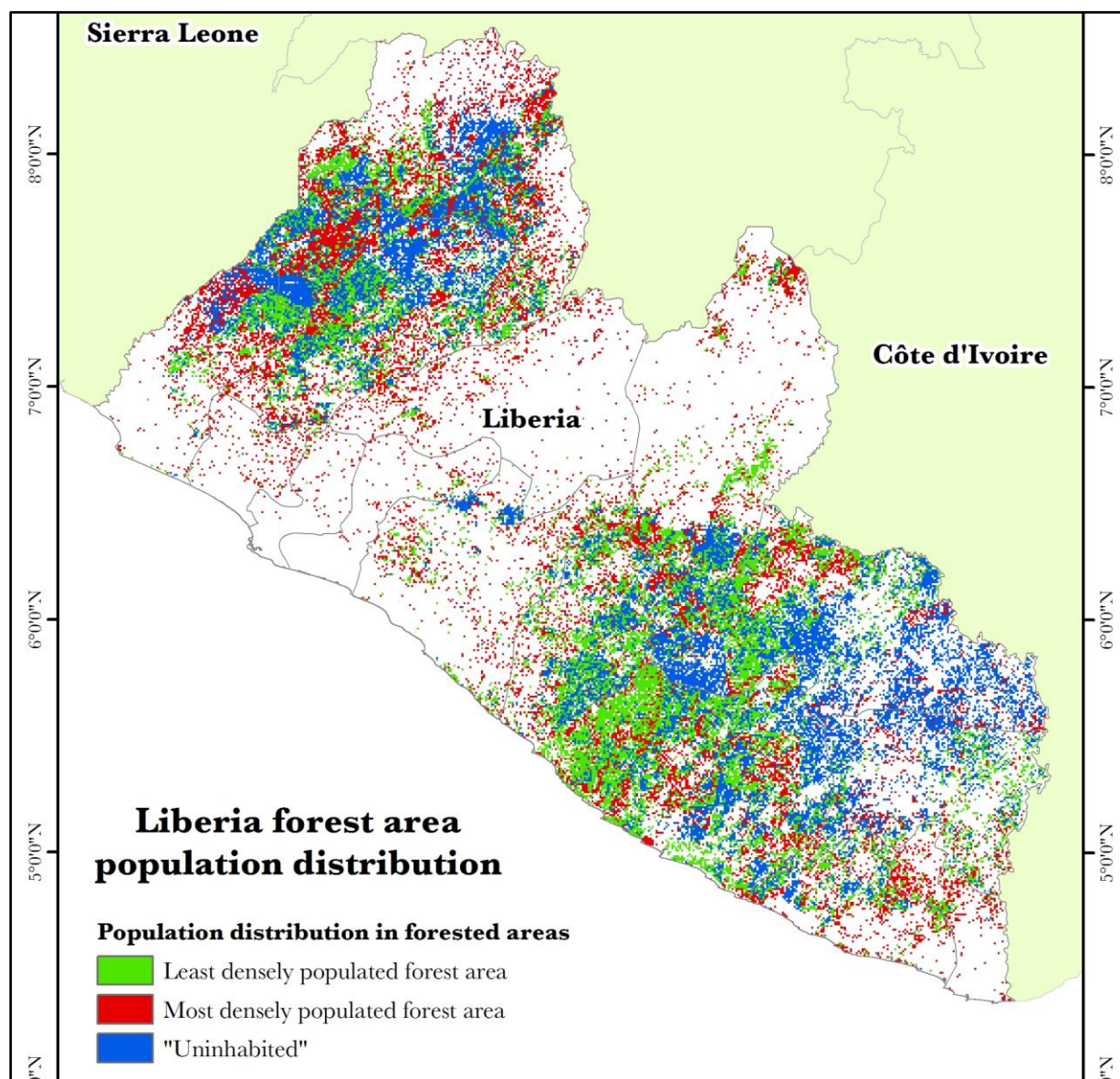
¹³ Liberia's Land Rights Policy (2013) does make special allowance for "Customary Protected Areas" which may provide a means of reducing the number of PAPs.

- 2) Ensure that protected area policies allow smallholders and CFEs, among others, to continue with low impact productive activities;
- 3) Prioritize the establishment of Customary Protected Areas as part of the accelerated implementation of the 2013 Land Rights Policy;
- 4) Consider alternatives to protected areas like demarcated community land (see Appendix) or protected/conservation areas within mining and industrial agricultural concessions, which may provide equivalent climate change mitigation impact at a much lower cost;
- 5) Develop means of financing ongoing maintenance of protected areas, perhaps through innovative means like community management;
- 6) Extending the timeframe for implementation, which may help to ease the excessive burden on Liberia's limited bureaucratic capacity;
- 7) Test and deploy effective and scalable means of local engagement to reduce social conflict and improve planning.

Protecting Liberia's forests is an urgent national and global priority. Given Liberia's new Land Rights Policy, the existing distribution of Liberia's population, and the potential risks and costs of displacement, it is clear that Liberia's rural landowners will need to be primary partners in any conservation effort. We hope that this paper will be helpful in furthering this crucial effort.

Appendix: Population Distribution in Liberia's Forests

The map below picks out the most and least densely populated 30% of Liberia's forest land. It also indicates areas which are marked as "uninhabited". Even where this is the case, much of this land will be used by local forest-dependent people.



Appendix: Cost of Compensation

We looked at a number of case studies to establish the approximate costs of resettlement per PAP. Further, we have attempted to distinguish between physical displacement costs and economic displacement costs.

This process involved some basic calculations based on publicly available data. The results are representative, rather than precise, but they are reliable enough to build a reasonable picture. The overall picture that emerges from these case studies is an average resettlement cost of around \$6,000 per person. There are, however, a number of caveats that go along with the observed data and this average figure.

First, the range is significant. Second, none of these projects were for the use of land for national parks. It is clear that such designations involve significant amounts of resettlement (see figure below) but none of the projects relating to national parks and/or conservation efforts that were found detailed costs. Third, the numbers of PAPs identified sometimes refers only to property owners.

We found a larger sample of cases in which it was not possible to distinguish between economic and physical resettlement costs. These were, for the most part, excluded but we have retained the Arcelor-Mittal case because it is instructive and because we are confident that the majority of the cost is for economic displacement.

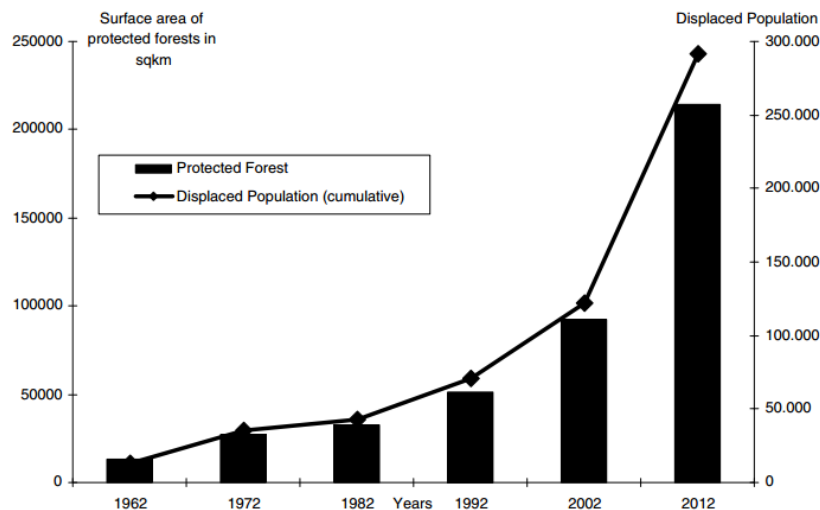


Figure 2. The surface area of protected areas in Central Africa and the number of people displaced from these areas. Source: The studied sites constitute 45% of the surface area under protection in the six research countries. To expand the research areas, reduce costs, and save time, some field studies were carried out along with other operational assignments; thus the group of 12 cases is a random set rather than a statistically a priori-selected sample. Nevertheless, surveys and policy documents from Cameroon (MINEF, 2003) and Gabon (MEFEP, 2005a, 2005b), which have assessed all protected areas of these countries, surveys by other researchers on other parks in the six study countries (see bibliography), and a wealth of published studies on other parts of Africa (see bibliography) document that our 12 cases are neither the worst, nor the best cases, but rather reflect the average situation on the ground. The demographic data for those areas not surveyed (55% of the area under protection) and the 2012 projections were computed by extrapolating the average population density of the case study sites of one country (see Table 2) to all protected areas of this country. The ratio (project affected people per hectare) is very similar for all protected areas in each of the countries. Due to that, it is in our view possible to extrapolate the case study data to national and regional level. Our impact assessment takes as starting point the year in which the park has been created (IUCN et al., 2005; Sourmia, 1998) and our prognosis for 2012 is based on the assumption that the countries fulfill their conservation objective (30%) by 2012.

Case Studies

1. Arcelor-Mittal¹⁴ (2014-2015)

Affects 1,500 farmers who will lose their farming land, so Arcelor-Mittal (AM) established a Mine Resettlement Coordination Committee.

- By the end of 2014, 901 affected farmers had received financial compensation for loss of land.

March 2014: AM started payments to 425 farmers.¹⁵

- The payment process began on 28th February, when 50 farmers received their first payments. Payments continued with one hundred additional farmers receiving compensation benefits over the weekend. When this process is completed, the company will have paid \$4.2 million.

July 2014: “\$4.5 million was disbursed in March to farmers in Gbapa and Zolowee.”¹⁶

April 2015:

- i. “According to Vaani, Kaizolu, a Liberian who heads the Community Liaison Unit of ArcelorMittal, he says the resettlement program has paid out more than USD\$7 million dollars in compensation to over 1,000”¹⁷
 - i.e. ~\$7,000 / farmer
 - NB: “The company has in the last three years expended over USD\$7 million in resettlement related programs”
- ii. “more than 1,000 persons in Bong, Nimba and Bassa counties, with the bulk of such payments taking place in Nimba County.”
- iii. “In 2014, this trend continued with 904 farmers receiving compensation for their farmland and crops. According to Fumba, the farmers received over USD\$6 million dollars in resettlement payments”
 - i.e. \$6,637.17 / farmer

Diamond miners

November 2013: The company made payments totalling \$1.2 million to 77 diamond miners living in the Gbapa area. I.e. \$15,584/miner

¹⁴ <http://corporate.arcelormittal.com/sustainability/snapdown-hub/community-land-use-liberia>

¹⁵ <http://liberia.arcelormittal.com/news-and-media/press-releases/2014/mar/03-03-2014.aspx>

¹⁶ <http://www.platts.com/latest-news/metals/london/unrest-at-arcelormittals-liberian-iron-ore-mine-21866680>

¹⁷ http://www.tlcafrica.com/news_arcelor_mittal_resettlement_program_april_8_2015.htm

2. Buchanan Highway construction (2012)¹⁸

150 PAPs; 201 children/wards/elderly will also be affected by the project. “This brings the total of persons to be affected by the project to 351.”

- 150 PAPs whose structures are to be demolished. A total of 173 structures affected.
 - i. But also... (“110 or 64% will be fully affected or demolished, while 63 or 36% will be partially affected”)
 - ii. The majority (148 or 99%) prefer cash compensation or financial assistance so that they can seek relocation. Even though some of the PAPs claimed to be legitimate owners of the land they occupy (65 or 43 %), during the review process, only 4 PAPs (3%) established legitimate titles.
- One Community Bus Stop, 3 Churches and 2 Schools

Total bill for Resettlement Action Plan = \$ 882,241.79

- Cost for compensation and resettlement of PAPs for structures in the affected area amounts to US\$803,218.70
- Relocation allowance for residential: US\$8,300.00
- Relocation allowance for business center: US\$29,500.00.
- Relocation for public utilities: US\$650.00
- Cost for compensation of land: US\$2,800.00.
- Cost for assistance to vulnerable persons: US\$8,375.00
- Cost for the administration, monitoring and evaluation: US\$5,300.00
- Contingency: \$24,098.09

Net Cost per PAP = \$5,881.61

Net Cost per PAPs including dependents = \$2,513

Physical and economic resettlement

Due to inconsistencies in the figures provided it is hard to provide accurate estimates for how physical and economic resettlement costs should be divided.¹⁹

Figures below assume that “compensation and resettlement of PAPs for structures” (of \$803,218.70) covers all the physical costs.

Next, we assume that the contingency, monitoring and evaluation costs are \$29,398.09

This would leave an actual economic resettlement cost of \$49,625.

This gives total costs for physical resettlement, including a proportion of admin, of \$830,906.18

- i. Or \$5,539.37/PAP (assuming all 150 PAPs physically affected)

¹⁸ http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2012/10/01/000333037_20121001004538/Rendered/PDF/RP9660v30RP0P10ver0to0Buchanan0Port.pdf

¹⁹ See Figure 2 for the figures provided in the document which appear to total a great figure than the sub-total provided.

- Economic = \$51,335.61
 - i. Or \$342.24/PAP (assuming all 150 economically affected)

3. *Sime Darby (2011)*

As of 30 September 2011, SD paid US\$1,348,978.94 as crop compensation to 2,132 farmers.²⁰

- Average \$632.73 / farmer

Physical and Economic resettlement

Given the government and Sime Darby's insistence that the land belonged exclusively to the government, and Sime Darby's own description of its resettlement payments as "crop compensation", we are likely safe in assuming that the 2011 figures (i.e. \$623.73 / farmer) represent sums paid exclusively for economic resettlement costs.²¹

We could describe the \$5/ha/annum that Sime Darby paid for the land as resettlement cost, but this should properly be considered a separate cost to the developer.

4. *Cote d'Ivoire, Liberia, Sierra Leone and Guinea Interconnection Project (2010)*²²

Construction of 1,411km of high voltage transmission lines, as well as the extension of existing, high voltage substations in Man (Ivory Coast); in Sannequille, Buchanan, and Monrovia (Liberia); in Nzérékore and Linsan (Guinea); in Bumbuna (Sierra Leone).

- Cut-off dates for claims: November 2009 & May 2010 (Cote d'Ivoire)
- "The project will result in the physical displacement and/or economic displacement of a total of 5,267 PAPs in the 4 countries"
- In Liberia "There are no explicit laws that describe principles linked to resettlement. However, land acquisition and distribution are guided by the Land Act (1950), the County Act (1969), and the Land Acquisition Act (1929)."

Cote d'Ivoire

- "...estimated amount of land required for the Project is 464 ha. Twenty-one dwellings and one double-story house are located in the RoW."
- "total of 692 PAPs was identified" as eligible "for compensation or resettlement"

Liberia

- "Most of the PAPs are small-scale farmers whose losses concern mainly rubber trees, cassava farms and other crops that have spread into the RoW. According to national practice,

²⁰ Sime Darby. 2012. *Sime Darby's Response to New York Times Article*. http://www.simedarby.com/Sime_Darby's_Response_to_New_York_Times_Article.aspx

²¹ Friends of the Earth International. June 2013. *Sime Darby and land grabs in Liberia*. http://www.foei.org/wp-content/uploads/2014/03/Factsheet_Sime_Darby_Liberia.pdf

²² [http://www.afdb.org/fileadmin/uploads/afdb/Documents/Environmental-and-Social-Assessments/Multinational%20-%20C3%B4te%20d%E2%80%99Ivoire-Liberia-Sierra%20Leone-Guinea%20\(CLSG\)%20Interconnection%20Project%20E2%80%93%20RAP%20Summary.pdf](http://www.afdb.org/fileadmin/uploads/afdb/Documents/Environmental-and-Social-Assessments/Multinational%20-%20C3%B4te%20d%E2%80%99Ivoire-Liberia-Sierra%20Leone-Guinea%20(CLSG)%20Interconnection%20Project%20E2%80%93%20RAP%20Summary.pdf)

most of the lands are communally owned. Some encroachment of farms, and a few private properties with genuine deeds are located along the identified line route.”

- “one thousand one hundred and fifty one (1,151) PAPs”
 - i. Estimated average income is equivalent of \$79
 - ii. 157 households will suffer loss due to project activities in the RoW
 - iii. “difficult to differentiate between Properties Affected People and Project Affected People as the two groups reside in similar communities”
- 68,865 trees were recognized for compensation, 29 houses and 70.5 acres of crops

Sierra Leone

- 414 property owners will be affected

Guinea

- 112 PAPs

Valuation of compensation – land, structures, crops and trees

Cote d’Ivoire

- \$771,532 proposed for land (692 PAPs = \$1,114.93/PAP);
- \$77,608 estimated for structures (692 PAPs = \$112.15/PAP).
- Property + structures = \$1,227.08/PAP
- No figure given for crops & trees²³

Liberia

- \$168,000 (\$145.96/PAP for 1,151 PAPs) for land – “mechanism [=] cash payment after consultation with the Paramount Chief and Country Development Committee on recent land sales of titled properties. In rural areas, where land is held under customary, tenure prevailing market price may be negotiated with chiefs.”
- “Total estimated cost for compensation for houses/ huts and for buildings is USD 48,800 and USD 110,000 respectively” (i.e. 158,800 in total, or \$137.97/PAP)
- Property + Structures = \$283.93 / PAP (= \$158,800 / 1,151 PAPs)
- “...total compensation for trees and for crops is USD 9,949,075 and USD 611 respectively” (= \$8,644.38 / PAP)
- Total = \$10,275,875 (\$8,928.31/PAP)

Sierra Leone

- \$1,167,525 for land (\$2,820/PAP @ 414 property owners affected)
- \$218,352 for structures (\$527.42/PAP @ 414 PAPs)
- Property + Structure = \$3,347.42/PAP (= \$1,385,877 / 414 PAPs)
- Total for crops + trees = \$326,765 (\$789.287/PAP)
- Total = \$1,712,642 (\$1,316.71/PAP)

²³ “Crops were valued based on the Ministry of Agriculture guidelines for each type of crop and corresponding cultivated area. (Decree no: 95-817 of 29 September 1995 and Order no.098 of March 1996.) For trees, each unit was multiplied by the maximum prescribed rate.” (P. 13, *Summary of the Resettlement Action Plans*)

Guinea

- \$171,208 for land (\$1,528.64/PAP @ 112 PAPs)
- \$12,390 for structures (\$110.625/PAP @ 112 PAPs)
- Property + structures = \$1,639.27/PAP (\$183,598 / 112 PAPs)
- Crops + trees = \$1,036,783 (\$9,256.99/PAP)
- Total = \$1,220,381 (\$10,896.26/PAP)

From these figures:

- Net project 4-country mean = \$5,592.09/PAP (= \$22,368.36 (Sum of total compensations/PAP)/4)
- Net weighted mean \$5,934.17/PAP (=14,058,038 (total compensation)/2,369 (total PAPs))

From total project figures:

- “The total resettlement costs for all 4 countries amounts to USD 15,579,647:
- Cote d’Ivoire: USD 1,680,138
- Liberia: USD 9,108,286 = \$7,913.37/PAP
- Sierra Leone: USD 2,924,854.80
- Guinea: USD 1,866,368”
- Net cost = \$6,576.47/PAP

Physical and economic resettlement

Physical:

Calculated compensation for property & structures = \$1,087.98/PAP (\$2,577,415 / 2,369 PAPs)

Net compensation estimate = \$1,205.74/PAP (assuming stated total costs = 110.823765% of calculated net costs)

Economic:

Calculated compensation for crops and trees (excluding Cote d’Ivoire) = \$6,746.17/PAP (\$11,313,324 / 1,677 PAPs)

Net compensation estimate = \$7,476.36/PAP (assuming same ratio as above)

The increase in figures between the calculated and estimated cost assumes that the difference between the calculated net figures and the total resettlement costs given by the document is made up of “livelihood restoration programs, community infrastructure programs, monitoring and evaluation [and] an independent resettlement completion audit”, and that these costs are equally distributed between economic and physical resettlement costs.

9. Sierra Leone Bumbuna Hydroelectric²⁴

38 villages; 5,033 people.

- 41 households (186 people in five villages) “that will be relocated”
- 95 farm plots which are farmed by 171 farmers covering a total area of 117 ha that will be partially or fully inundated (104 hectares of these lands will be lost but will need 137 ha in replacement due to the lower productivity of dry land compared with wet land).
- “4,956 commercial value oil palms and 3,715 other economic trees”
- “Some villages” where footpaths will be lost, plus 48 sacred sites flooded

“A total number of 1,579 respondents were recorded as eligible recipients of the moving transition allowances”

2 programs for “income restoration and livelihood related activities”:

- Livelihood Assessment and Income Restoration (LAIR) program and the Stabilized Agriculture Program (SAP)
 - i. Short-term (emergency) phase
 - Food support
 - Foot path construction
 - Sustainable agricultural support (formation of farmer field schools) (FFS)
 - Agribusiness units
 - Life skills programs & youth reintegration programs
 - ii. & long-term (post-commissioning phase)

“The Total cost of the RAP is US \$ 4,450,272;

- comprising Resettlement US \$ 286,370;
- Compensation US \$ 1,399,250;
- Community Development US \$2,764,652.”

Net cost = \$884.22/PAP (\$4,450,272 / 5,033 PAPs)

- Resettlement and compensation (R and C) = \$1,685,620
- R and C / “eligible recipients of the moving transition allowances” (1,579) = \$1,067.52/person
- R and C / relocated households + inundated fields (357) = \$4,721.62/person

Physical and economic resettlement

- Physical: Resettlement alone = \$1,539.62/relocated person (\$286,370/186 relocated people)
- Economic: Compensation and Community development = \$2,637.05/eligible recipient (\$4,163,902 / 1,579 eligible recipients), or \$827.32/PAP (\$4,163,902/5033 PAPs).

²⁴ http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2010/08/25/000334955_20100825031100/Rendered/PDF/RP9920v10P086810Info0Shop0Aug02010.pdf