Landmines and Spatial Development
Appendix VI
Sensitivity Analysis, Local Associations *

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February 18, 2019

Abstract

In this Appendix, we first present graphical illustrations of the within-locality association between economic activity and landmine clearance over time. Second, we give results associating landmine and UXO clearance with population and road investments. Third, we discuss measurement error issues both in the demining and luminosity variables. Fourth, we describe additional sensitivity checks for the average within-locality correlation between luminosity and clearance. Fifth, we report various robustness checks of the uncovered heterogeneous association between clearance and luminosity in localities connected to the colonial transportation network and those with agricultural markets (cantinas).

*Additional material can be found at www.land-mines.com

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1 Before-After Graphs: Evolution of Luminosity and Demining

It is useful to plot the evolution of luminosity around the year of full clearance, as this provides a visualization of the local estimates (reported in Table 3). Below we present four figures tracing log luminosity (Figures 1*a* and 2*a*) and the probability that the locality is lit (Figures 1*b* and 2*b*) around the timing of full clearance ($year = 0$). We partial out locality-specific constants and province-specific year fixed effects and then plot the residuals of luminosity in the 10 years before and 10 years after each locality's full clearance. The dashed horizontal lines give the mean values of demeaned luminosity before and after full clearance. Before discussing the graphs, a few caveats are in order. First, given the presence of spillovers, these "control"-"treatment" before-after graphs just illustrate local associations assuming no externalities. Second, there is noise in the exact date of recording of interventions, a concern that is non-negligible for demining activities before 2001 and to a lesser extent before 2007 (this is why we focus on the the three periods analysis).

The two Panels in Figure 1 illustrate the before and after full clearance evolution of luminosity across all contaminated localities. Figure 2 plot the demeaned luminosity before and after clearance looking across localities with more than one confirmed hazardous area (CHA), as this allows examining the evolution of luminosity for localities with a non-trivial degree of contamination.

Two patterns emerge across all Figures. First, upon full clearance luminosity increases and remains higher throughout the post-full-clearance years. The influence of demining is long lasting. Second, luminosity starts increasing one-to-three years before complete clearance, as demining operators are clearing more and more of the underlying contamination. This is to be expected as the duration of demining operations for the median locality was roughly 6 years whereas for those with more than one CHA the median duration was 8 years.

2 Alternative Outcomes

2.1 Population

During the civil war, there were widespread population movements both as a result of violence and because of landmine contamination. Moreover, the FRELIMO government and RENAMO moved peasants to "development villages" and labor camps, respectively (see the historical overview in Appendix *I*). Unfortunately, locality-level data on population and casualties at the end of the civil war

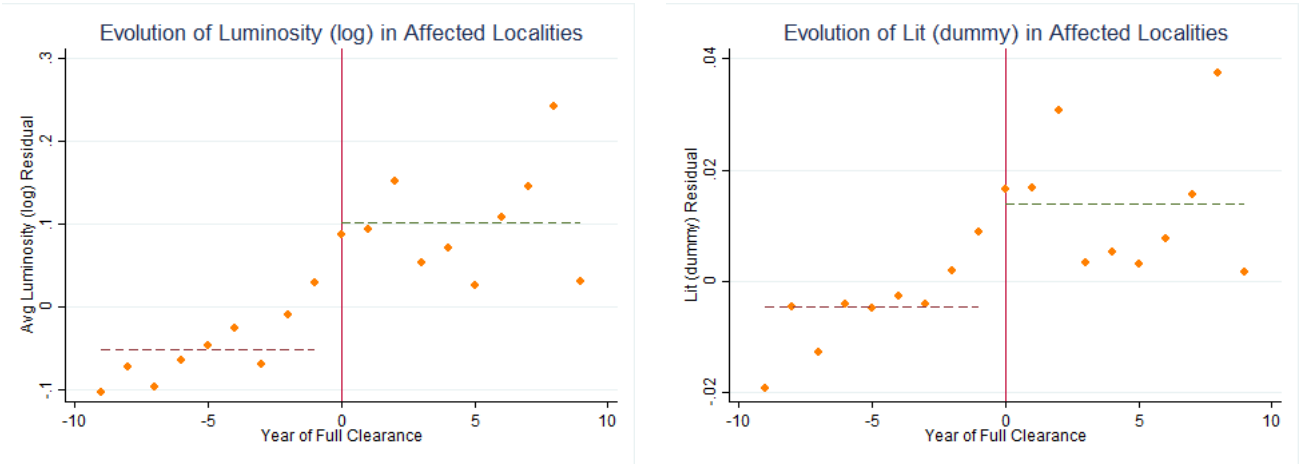

Figure 1: **Evolution of Luminosity before and after Last Year of Intervention.**

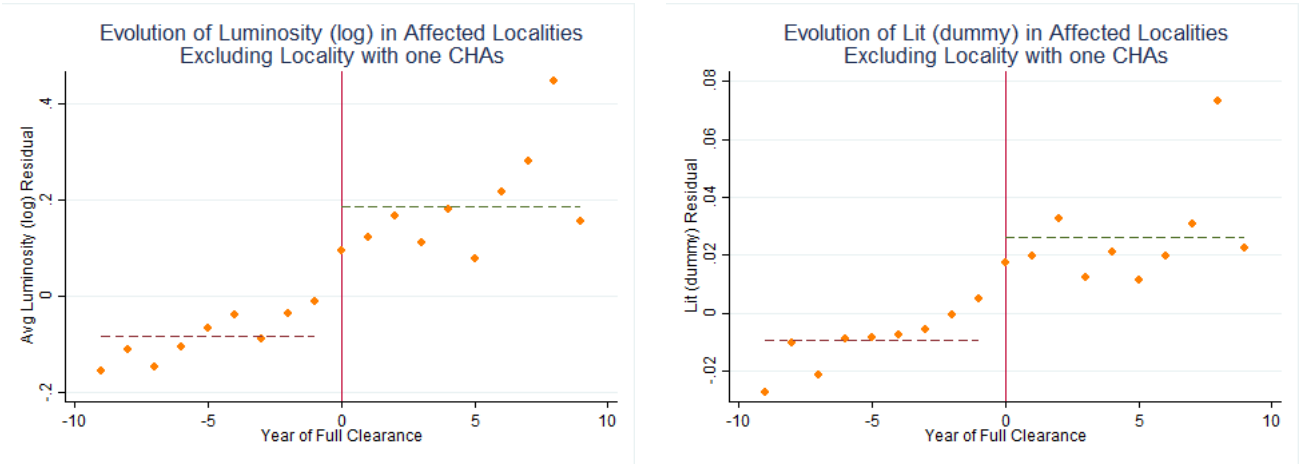

Figure 2: **Evolution of Luminosity before and after Last Year of Intervention. Excluding Localities (162) with only one Confirmed Hazardous Area.**

in 1992 are not available, so cleanly estimating the impact of demining on repatriation is not feasible. One way to gauge the degree of population reshuffling is to look at the evolution of population between the pre and post-civil war censuses. The correlation of log population at the locality level between 1980, the first post-independence Census, and 1997, the first-post-civil war census is 0.59 suggesting non-negligible changes in the population distribution during this 17-year period. Perhaps, what is more telling is the fact that the correlation of log population between the pre and post-civil war period strengthens across localities as time elapses; the correlation becomes 0.66 between log population in 1980 and in 2007. This suggests that the spatial distribution of the population gradually returns to the one observed during the pre-civil war era.

Among the main goals of demining interventions during the early years, was to facilitate the return of the internally and externally displaced people. There were around 1.5 million refugees mostly in Malawi and Zimbabwe, but also in Swaziland and Tanzania. And there were more than 2 million internally-displaced people, residing at dire conditions either in the big cities or in by the border camps. We used information on the local population for 1980 and 2007 and explore whether reducing the degree of mine contamination (or eliminating it altogether) influences the number of people living in that locality. We recognize that changes over time in the number of people reflects both internally displaced people and refugees in border areas returning to their homes (this is in line with United Nations action and both HALO Trust and NPAs action on the Malawian border) as well as differences in net fertility rates.

We attempt to capture the relationship between population movements and demining activities by estimating long-run-difference specifications over the $1980 - 2007$ period. Unfortunately, we are constrained to use 2007 as the terminal year, because the national statistical agency has not processed the 2017 census data, yet. Table 1 gives the results. The unconditional specification in (1) reveals a significantly positive association between the log of cleared CHAs (Confirmed Hazardous Areas) and population growth. The coefficient retains its economic and statistical significance when we condition on various pre-civil-war features (paved, unpaved roads, the presence of cantinas) as well as population and luminosity (in columns (3) and (5)). The same pattern emerges with the cleared dummy that identifies fully cleared by landmines and UXOs localities; however, the coefficient on the indicator variable is noisy and does not pass standard significance levels. This applies both in the unconditional specification (in column (2)) and when we control for pre-clearance factors (in columns (4) and (6)). This might be because by 2007, only 48% of the contaminated localities were fully cleared, as well as the possibility that displaced individuals would start coming back home as soon as demining would start and not wait till full clearance. Another reason behind the weaker and insignificant associations between landmine clearance and population comes from the fact that landmine clearance may foster development, promoting agglomeration, but at the same time, it may allow people residing in remote areas to leave and move to bigger towns and communities.

2.2 Building New Roads and Improving Pre-Existing Ones

Going over the documents on the history of demining it becomes clear that the latter enabled access to previously unusable segments of the network and often times upon the completion of demining there

were improvements on the transportation network. As an illustrative example among the many we encountered, a report from a HALO Trust operation in Lapala (in Nampula province in the North) in 2002 states that " *clearance will allow the rehabilitation of the [affected] road. Demining will benefit the local population and restore the free circulation of vehicles. Moreover, vehicles will be able to avoid the big detour they currently face in the vicinity of Lapala village.*" Since the end of the civil war many new roads have been constructed. A natural question is how the timing of demining maps into these changes in the transportation network.

To address this question we collected information on the Mozambican transportation network including roads, railways and navigable rivers. We gathered information on the road network from the National Road Administration (ANE) in 1998, 2003, and 2011. For each road segment, we obtained information on the conditions (paved, unpaved or trail) and quality (good, fair, bad). We also retrieved data for the railways network from the Ministry of Transport and Communication. For each of the rail lines, we identify the name and the length of each segment. We merged this data with information on the conditions and quality of the transportation network in the late colonial era, in 1973. Analogously to the 2011 roads data, we retrieved detailed information and reconstructed the classification of the colonial road network into paved, unpaved or trail conditions.

Table 2 gives panel estimates that associate new road building and improvements of the pre-independence transportation network with landmine clearance. In columns (1)-(2) the dependent variable is an indicator that takes the value one if a new road appears in the locality at the end of each of the main periods of demining (in 1992, 1999, 2007, and 2015). In columns (3)-(4) the dependent variable reflects whether there has been an improvement in the colonial transportation network (of 1973). The estimated coefficients in (1) and (3) suggests that localities that experienced a larger number of clearance interventions were both more likely to have new roads and see improvements in the pre-existing network. Upon full clearance of a locality from CHA, new roads were not more likely to be built (column (2)), but existing roads were more likely to be upgraded. These findings thus uncover a likely mechanism of the "reduced-form" estimates linking luminosity and landmine clearance; the clearance of contaminated hazardous areas allowed authorities to expand and modernize the road network, lowering transportation costs and promoting commerce.

3 Sensitivity Analysis. Measurement Error

We commence the sensitivity analysis of the within-locality correlation between luminosity and landmine clearance accounting for measurement error. While part of our contribution has been the compilation of almost complete documentation of all landmine clearance operations for any country, measurement error is present. First, in spite of our efforts, we miss some operations. Second, for some of the operations, there may be noise on the GIS coordinates and the exact timing of clearance. For example, the quality of the reports differs and in many instances reports are incomplete. Third, some interventions may be artificial, as commercial operators may be inflating their activities.

3.1 Northern Provinces

To account for error-in-variables on the clearance statistics, we restricted estimation to the Northern provinces. HALO Trust, one of the world's largest and most respectable NGOs on clearance, was the dominant demining operator in the Northern provinces of Cabo Delgado, Nampula, Niassa, and Zambezia. HALO Trust's teams cleared more than 90% of SHA in these provinces. HALO Trust data are less noisy; all activities were stored in digital format in IT systems, since the start of the operations in 1994. Moreover, the clearance reports are quite detailed and evidently of higher quality. Furthermore, we verified the roughly 1100 interventions conducted in the Northern provinces by HALO Trust with interviews with practitioners and also cross-validated them with other reports.

Table 3 replicates the baseline panel fixed-effects specifications in the 590 localities (49.7% of the total) of the country's Northern Provinces. Columns (1)-(4) report the yearly panel estimates; columns (5)-(8) report the preferred period estimates that account for error on the exact year of clearance. The coefficient on the log number of cleared accumulated confirmed hazardous areas (CHA) and the cleared CHA indicator is positive and highly significant across all specifications.

3.2 Confirmed Hazardous Areas and "Cancelled" Suspected Hazardous Areas

Another way to gauge the importance of measurement error is comparing the correlation between luminosity and clearance of contaminated areas with the correlation between luminosity and the cancellation of suspected hazardous areas.

As we detail in Appendix *III* and briefly comment in the main text, the verification check of whether a suspected hazardous area (SHA) was indeed contaminated (and consequently classified as

a confirmed hazardous area, CHA) frequently resulted in the cancellation of the suspected threat. One may wonder whether the sheer reclassification of "false positives" is important for local economic activity. To address this question, we distinguish between hazardous areas where contamination was confirmed (CHAs) and areas that were suspected of being contaminated, but upon closer examination by the surveyors was "cancelled" on the basis of false or inaccurate information. We then test whether luminosity correlates with the actual detonation of landmines or whether the correlation is also present when the fear of potential contamination is dispelled.

A reading of the "cancelled" SHAs reports, reveals that the local community was often aware that the presumed area was not contaminated, as often it was already in use. For example, in Nunge (Cabo Delgado) HALO Trust team visited a suspected hazardous area in 2002 and, after interviewing the local population, cancelled the SHA because "*locals stated that landmines were never affected the community and the SHA was on a parcel of land that was cultivated*". Another example comes from HALO Trust's visit to Maumbica village where the HALO team interviewed "*Regulo Majoelela and his assistant Alide Yassine, who confirmed that the area was free and safe from mines*" and thus cancelled the corresponding SHA. Often "cancelled" SHAs reflected inefficient initial surveying rather than a true misunderstanding of locals regarding the presence of mines. This is the case of a SHAs in Mbatamila village, which HALO Trust visited in 2005. The area was suspected of contamination by the surveyors because of the presence of two burned trucks; HALO team could find no local confirming the presence of mines and the deminers realized that the population was using both the suspected area and the nearby road. Thus the SHA was cancelled.

Keeping these caveats into account, we added to the $7,423$ CHAs interventions, an additional $1,994$ SHAs that were "canceled". For each of these SHAs, we have information on the date of "cancellation". We run the baseline empirical panel specification, associating luminosity with both the log of (1 + number of cleared CHAs) and the log (1 + number of cancelled SHAs). Table 4 reports the panel estimates. The log number of CHA continues to enter with a significantly positive coefficient; the estimates are quite similar to the ones in Table 2. In contrast, luminosity is not systematically related to cancelled SHA that were based on inaccurate information. The estimate on the "cancelled" SHA variable is small, changes sign, and does not pass standard significance levels in any of the perturbations. The results in Table 4 show that it is clearance of actually contaminated areas that correlates with local development; "false positives" do not correlate with luminosity, as in most instances the local community was using suspected but non-contaminated areas.

3.3 First and Last Intervention

We also examined whether economic activity, as reflected in luminosity, increases with the first/initial demining operation or whether luminosity increases when the locality is completely cleared by contamination. Table 5 reports the panel estimates. In line with the baseline estimates in Table 3, luminosity increases consistently after a locality is fully cleared by contamination. Luminosity in the years between the first and the last CHA intervention is not statistically different from the average luminosity before the first intervention. This lack of significance mitigates concerns that the positive association between landmine clearance and luminosity is driven by the presence of deminers or because of contemporaneous development projects. If this was the case, the association between luminosity and clearing landmines would become manifest as soon as the first intervention commences. The fact that luminosity increases after the locality is fully cleared suggests that local economic performance spikes once the area is completely free of CHA.

3.4 Rural Localities

Mozambique was one of the poorest countries in the world in the 1990s. A 1992 Human Rights Watch report argued that parts of the country had returned to the Stone Age. As such, there is not much micro data reflecting development. To bypass data availability, we proxy local development using satellite images on light density that recent works show that correlate with well-being (see e.g. Henderson, Storeygard, and Weil (2012); Nordhaus and Chen (2014); Michalopoulos and Papaioannou (2014)). In Appendix IV we show that luminosity correlates strongly with education and public goods provision using Demographic and Health Surveys covering 31 Sub-Saharan African countries and Mozambique. Appendix IV further shows that luminosity and mean years of schooling correlate significantly across Mozambican localities, the exact same unit of our analysis, using data from the 1997 and the 2007 population census.

Nonetheless, one may still worry that the significantly positive correlation between luminosity and demining stems from hard-to-account-for urban-rural differences and because luminosity is a better proxy of development in urban clusters than it is for rural areas. We thus repeated the analysis focusing only on localities that are 100% rural; effectively we drop all localities hosting a town or a city in 1997. Table 6 reports the estimates. The estimates are almost identical to those in Table 3. For example, the standardized "beta" coefficient in the full-sample estimates in column (1) of Table 3 is 0.071; the corresponding one in the rural sample in Table 6 is 0.069.

4 Sensitivity Analysis B. Additional Robustness Checks

4.1 Dropping Big Cities (Maputo, Beira, Nacala)

We estimated specifications dropping the three big cities, Maputo, Beira, and Nacala, as at the end of conflict in 1992, these cities were packed with refugees. Moreover, development (and luminosity) is considerably higher in these three cities. Table 7 replicates our baseline specification estimates dropping the localities hosting the largest cities, Nacala in the North, Beira in the Center, and Maputo in the South. The results are very similar to the baseline local estimates. There is a significantly positive within-locality association between luminosity and landmine clearance; localities with high luminosity are not driving the association.

4.2 Dropping Maputo Province

We also examined the stability of the estimates dropping the Maputo Province, as both luminosity and contamination are substantially high. In Maputo Province, 30% of localities were already lit in 1992 (with the country average being just 9%); and over time, development and urbanization increased considerably in this province that also neighbors South Africa. Contamination was also considerable in the province (though not in the capital), affecting 91% of the localities. The high degree of contamination reflects the effort of FRELIMO to shield the border with South Africa so as to block the rearmament of RENAMO, as well as RENAMO's efforts to isolate the capital.

Table 8 reports the fixed effects estimates when we drop the 78 localities of Maputo province. The table structure "mirrors" Table 3 of the main paper that presented the baseline panel fixed-effect estimates. There is a strong link between demining activities and luminosity. If anything, the estimates increase and become more precise. The "beta" coefficient of the logarithm of (1 + number of cleared CHA) increases by 9%-13%, whereas the coefficient on complete clearance is almost identical to the one reported in Table 3.

4.3 Lights Transformation

The 2015 measures of luminosity are recorded by a different satellite (VIIRS) than those used up until 2013 (DMSP-OLS) (Michalopoulos and Papaioannou (2018)). To make the measurements of the two satellite data comparable, we have followed the procedure of Li, Li, Xu, and Wu (2017). But one may wonder how this transformation affects the results. In Table 9 we run the baseline panel specifications

stopping in 2013 (rather than going till 2015), as this allows using data from DMSP-OLS. As of 2013, 87 localities (10.1% of the contaminated ones) were still not fully cleared; 35.30% of the localities are lit in 2013. Stopping in 2013 does not change the overall picture. The estimated coefficients drop only slightly; the relationship between demining and luminosity retains significance.

4.4 Collapsing Demining Intervention at Site Level

We rerun our main specification after collapsing the data at the site level. Multiple demining interventions might be linked to the same hazardous areas (see Appendix III for further details). After aggregating the 7,423 interventions, we obtain 6712 hazardous areas. This aggregation is innocuous both for the number of affected localities (855) and for the timing of full clearance (average duration is 6.89 years). Table 10 that "mirrors" Table 3 of the main body gives the results. The estimate is almost identical to the intervention baseline estimates.

4.5 Dynamic Panel Estimates

We estimated dynamic panel specifications, allowing for inertia in the dependent variable. As the time dimension exceeds 20, the "Nickell-bias" emerging from the joint inclusion of the lagged dependent variable and the locality-specific constants is unlikely to be large. Table 11 reports the dynamic panel estimates. There is inertia in luminosity, as the autoregressive AR(1) coefficient (a_1) is around $0.4-0.5$. The estimate on the log number of CHA and the cleared dummy retain their statistical significance. Given persistence in luminosity, the "long-run" effect of landmine clearance on luminosity is higher than the "short-term" effect ($\beta_{LT} = \frac{\beta_{ST}}{1-a_1}$). This is consistent with the "long/medium-run" association between landmine clearance and local economic activity (reported in Table 3, columns (5)-(8)) being larger than the annual estimates (reported in Table 3, columns (1)-(4)).

4.6 Restricting Estimation to Contaminated Localities

We also estimated quite restrictive specifications looking only on the sample of contaminated by landmines localities. Omitting localities without any CHA is inefficient; by dropping the "pure control" group, we do not properly account for trends and dynamics in luminosity. Yet, exploiting (within-locality) variability looking only on contaminated areas, we perhaps account better for hard-to-observe differential growth trends in the two groups of localities. Table 12 presents the results. Across all perturbations, the coefficient on the cleared CHA indicator and the log number of cleared CHA is

positive and statistically different than zero. The estimate is quite similar to the full-sample (baseline) estimates, though somewhat less precisely estimated. In spite of relying solely on variation in the timing of clearance within contaminated localities, the link between luminosity and CHA clearance retains economic and statistical significance.

4.7 Road Infrastructure Investments

A natural question that comes from the earlier results (in Table 2), is whether the demining - luminosity association (uncovered in Table 3) is (partly) driven by improvements in the transportation network that is linked to landmine clearance (Table 2). To address this issue, in Table 13 we repeat estimation of the baseline specification associating luminosity with landmine clearance, controlling for changes (new roads and improvements) in the local transportation infrastructure. The coefficient on demining declines by $5\% - 10\%$ suggesting that a small part of the local influence of demining on economic performance operates via the improvement of the local transportation network.

4.8 Long-Run Differences $(1992 - 2015)$

We also adopted a long-run $(2015 - 1992)$ difference specification. The merit of this specification is that we can account for conditions at the end of the war in 1992. These initial conditions may influence the dynamics of luminosity and clearance. Vector $X'_{i,initial}$ includes luminosity in 1992 (that captures potential convergence dynamics), log (area), log (population in 1980), indicators for the presence of different features of the 1973 transportation network, an indicator for the incidence of civil war violence, and an indicator for cantinas. The province-specific constants, μ_p, further account for the differential progress of landmine clearance and other hard-to-observe features shaping growth dynamics across provinces.

Table 14 reports the estimates. The dependent variable in columns (1)-(4) is the change in log luminosity between 1992 and 2015 and in (5)-(8) is the difference of the locality being lit. The latter takes three values; -1 for localities that were lit in 1992 and unlit in 2015, 0 for those observed either lit or unlit in both years, and 1 for localities which were unlit in 1992 and lit in 2015. The unconditional estimates in (1) and (2) are positive and highly significant. Accounting for differences in initial conditions in (3)-(4) does not move much the coefficients on clearance. This is not because the additional variables are insignificant correlates of development. The model's explanatory power

improves substantially with the adjusted R^2 increasing by roughly $35-40$ percentage points.[1] In spite of the inclusion of the rich set of significant controls, landmine clearance retain significance. The standardized coefficient in (4) is 0.075 suggesting that cleared localities (as opposed to not-contaminated ones) enjoy a boost in economic activity comparable to that of being one of the few localities endowed with a colonial railroad (about 13% of the sample). The patterns with the change in the lit indicator are similar. While pre-war traits correlate with subsequent regional growth, they do not change the strong association between clearing and long-run growth. The estimate on the $Cleared_{i,2015-1992}$ variable in (8) suggests that contaminated localities that were cleared between 1992 and 2015 are 11% more (less) likely to going from unlit (lit) in 1992 to lit (unlit) in 2015 compared to localities without any initial contamination.

4.9 Differential Trends

To further account for differential unobserved trends, we rerun the baseline empirical specification associating luminosity with local clearance augmenting the specification with interactions between initial conditions with the period constants. This allows accounting in a flexible manner for hard-to-observe dynamics on luminosity across regions with different endowments (roads/railroads, cantinas) and civil war experience, as well for differential dynamics on clearance. In particular, we interact the period dummies with indicator variables for the presence in the locality of *i*) paved primary roads in 1973; *ii*) unpaved roads in 1973; *iii*) trails in 1973; *iv*) railroad in 1973; *v*) navigable river; *vi*) colonial commercial agricultural market; and *vii*) a civil war event. Table 15 presents the results for the period specification (mirroring columns (5-8) of Table 3). Despite including many controls, the within-locality correlation between luminosity and clearance retain significance at standard confidence levels, though the coefficients drop somewhat.

5 Heterogeneity Analysis. Sensitivity

In this section, we present various sensitivity checks of the uncovered heterogeneity of the within-locality correlation between luminosity and clearance, shown in Section 5 of the paper. First, we report results looking at heterogeneity with respect to (w.r.t.) intervention characteristics (proximity

[1] Localities endowed with the colonial transportation infrastructure have experienced larger increases in luminosity; more populous localities as of 1980 and localities serving as local trade hubs before independence have also grown faster. The civil war dummy is also highly significant pointing to post-conflict catch-up dynamics. There is also evidence of (conditional) convergence, with relatively underdeveloped localities, experiencing faster growth.

to borders, towns, rivers, cantinas, roads, railroads, and war sites). Second, we present panel estimates looking at heterogeneity w.r.t. to clearance reports that are however available for only 63% of the CHA interventions. Third, we report panel estimates of heterogeneity w.r.t. locality features (connectivity, presence of agriculture markets).

5.1 Heterogeneity w.r.t. Intervention Characteristics

5.1.1 Rural Localities

We first explored whether the uncovered in Table 4 GIS-based heterogeneity of the correlation between luminosity and landmine clearance is robust to the exclusion of urban localities. We thus rerun the GIS-based specifications on the 1074 exclusively rural localities, as identified by the Census 1997. Table 16 presents the estimates. The patterns are similar to the full-sample ones, reported in Table 4. The within-locality correlation between luminosity and landmine clearance is significantly positive when interventions clear roads and railroads. The correlation is also strong for operations clearing towns.

5.1.2 Alternative GIS Classification Thresholds

Second, we examined whether the baseline heterogeneity findings (in Table 4 in the main body) are robust to altering the distance cutoffs in how we classify landmine contamination. In this regard, we double the thresholds of all 7 non-mutually exclusive categories, namely: (*i*) landmines close to roads and railroads (200 meters); (*ii*) CHA close to the national border (2 kilometers); (*iii*) landmine and UXO sites close to commercial hubs (2 kilometers); (*iv*) landmine threats close to areas experiencing major civil war incidents (2 kilometers); (*v*) CHA close to rivers (200 meters); (*vi*) CHA close to electricity pylons (200 meters); (*vii*) CHA close to major villages or towns (2 kilometers); and (*viii*) a residual category. Table 17 reports the panel estimates. The patterns are quite similar to the baseline estimates. Landmine clearance along roads and railways enters with a significantly positive estimate (with "beta coefficients" that are somewhat larger). The within-locality correlation between luminosity and CHA clearance is also stronger for demining operations clearing villages/towns and colonial commercial harbors (*cantinas*). In contrast, clearance operations in proximate to borders areas and rural places (the residual category) are not much correlated with luminosity. As in the baseline estimates, the within-locality correlation between luminosity and clearance operations in proximate to the national borders sites is negative; this is in line with the narrative that clearing border areas

allowed internally displaced people and refugees residing in camps at the border to return of their hometowns.

5.2 Heterogeneity w.r.t. Report-Based Characteristics

An alternative way to group clearance operations into different categories is reading the technical and completion report. Going over the total of $7,243$ interventions, we classified demining operations into 12 non-mutually exclusive categories. Unfortunately, $2,659$ reports are incomplete and thus we use only $4,584$ clearance operations for the report-based classification.

The breakdown of the report-based non-mutually exclusive categories is the following: electricity pylons (13%), footpaths (11.4%), farmland (9%), residential areas (9%), roads, railways, and bridges (9%), areas of military importance (7.3%), public infrastructure (6%), forest (4.4%), river (3%), water supply (3%), border (0.5%) and interventions report-based characteristics (38.4%). We then run panel specifications allowing the correlation between luminosity and clearance to differ across these report-based classifications. Appendix Table 18 -that mirrors Table 4- reports the results. The difference is that instead of classifying CHAs by locating them along key features of the country's infrastructure, we use the *report-based* classification and allow the coefficient of clearance to vary for each type.

Demining of residential places as well as of public infrastructure-related CHAs is associated with increases of economic activity, as captured by images of satellite light density at night. The correlation between clearing CHAs along residential areas and villages and luminosity is significantly positive. The report-based category that has a consistently positive impact on local development concerns interventions that the reports did not indicate what was the type of contamination (Not Classified). These are interventions for which the report description was either left blank or unclear. In an effort to better understand the CHAs with poor report coverage, we cross-tabulated the GIS-based classification with the report-based one. There are a total of $2,926$ CHAs for which the reports do not mention the type of the affected area. When we look where these unclassified areas of contamination belong to, according to the GIS categorization, it becomes apparent why the former enter in the regression with a consistently positive sign. Around 42% of these $2,659$ "unclassified" CHAs can be found along roads, railroads, points of commercial importance and in towns and villages.

5.3 Heterogeneity w.r.t. to Locality Characteristics

In Section 5.2 we present graphs showing that the luminosity - clearance correlation is: (i) stronger in connected to the pre-independence transportation network localities (as compared to non-connected localities) and (ii) is larger and more precisely estimated in cantinas with colonial agricultural markets as compared to ones without cantinas. Table 19 presents the panel estimates underlying the graphical analysis in Figures $4a - b$ and $5a - 5b$. Panel A reports the full-sample estimates, while Panel B reports the corresponding estimates focusing exclusively on rural localities.

Tables

Table 1: **Long-Run Differences, 2007-1980. Population as Outcome**

	Δ Log Pop	Δ Log Pop	Δ Log Pop	Δ Log Pop
	(1)	(2)	(3)	(4)
Δ Cleared Threats	0.063***		0.081***	
	(0.021)		(0.025)	
	[0.077]		[0.099]	
Cleared (dummy)		0.076		0.021
		(0.054)		(0.048)
		[0.046]		[0.013]
Paved Road 1973 (dummy)			0.452***	0.477***
			(0.059)	(0.060)
			[0.218]	[0.230]
Unpaved Road 1973 (dummy)			0.220*	0.242*
			(0.132)	(0.130)
			[0.040]	[0.044]
Trail 1973 (dummy)			0.216***	0.238***
			(0.053)	(0.053)
			[0.127]	[0.140]
Railway 1973 (dummy)			0.157**	0.175**
			(0.079)	(0.079)
			[0.066]	[0.074]
Navigable River (dummy)			0.002	0.006
			(0.066)	(0.066)
			[0.001]	[0.003]
Civil War (dummy)			0.153***	0.192***
			(0.051)	(0.049)
			[0.071]	[0.089]
Cantinas (dummy)			0.115**	0.118**
			(0.047)	(0.047)
			[0.070]	[0.072]
Log - Population Density 1980			-0.471***	-0.461***
			(0.038)	(0.037)
			[-0.903]	[-0.884]
Log - Luminosity 1992			0.043***	0.041***
			(0.010)	(0.010)
			[0.160]	[0.154]
Log - Land			-0.494***	-0.468***
			(0.050)	(0.048)
			[-0.706]	[-0.669]
Province FE	Yes	Yes	Yes	Yes
R-squared	.124	.12	.417	.41
Observations	1,077	1,077	1,077	1,077

Notes: The table reports long-run difference OLS specification estimates associating changes in log population (over the period 2007-1980) with demining activities and various control variables. In all specifications, the dependent variable is the change in the logarithm of population between 2007 and 1980. Columns (1) and (2) give unconditional specification estimates. Columns (3)-(6) include a rich set of control variables, namely: indicator (dummy) variables that take the value of one when a locality is crossed by the key elements of the1973 transportation network (Paved Road, Unpaved Road, Trails, and Railway); indicator variables for the presence of navigable river, the presence of colonial commercial harbour (*Cantinas*), and for localities affected by major civil war incidents. The set of control variables also include log population density (using the 1980 census), log luminosity in 1992 (before landmine clearance operations commence), and log land area. All specifications include province fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses and standardized "beta" coefficients (in squared brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 2: **New Roads and Old Network Improvement**

	Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	New Road (dummy)		Old Net Improvement (dummy)	
	(1)	(2)	(3)	(4)
Cleared Threats	0.039***		0.080***	
	(0.010)		(0.011)	
	[0.084]		[0.159]	
Cleared (dummy)		-0.001		0.069***
		(0.018)		(0.019)
		[-0.001]		[0.065]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.351	.346	.441	.432
Observations	4,748	4,748	4,748	4,748

Notes: The table reports panel fixed-effects OLS estimates associating new road construction (in columns (1)-(2)) and improvement over the pre-independence road network (in columns (3)-(4)) with landmine clearance operations. Estimation is run at the three main periods of landmine clearance (1992-1999, 2000-2007, and 2008-2015). In columns (1) and (2), the dependent variable is an indicator that takes the value of one in the period and all subsequent periods of a new road construction in a given locality. In columns (3)-(4), the dependent variable is an indicator variable that takes the value of one in the period and all subsequent periods following the improvement/expansion of an old road (corresponding to the 1973 road infrastructure network). Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 3: **Land Mine Removal and Local Development. Only North**

	Yearly				Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cleared Threats	0.345***		0.036***		0.564***		0.065***	
	(0.077)		(0.008)		(0.109)		(0.013)	
	[0.090]		[0.093]		[0.146]		[0.156]	
Cleared (dummy)		0.342***		0.033**		0.666***		0.071***
		(0.116)		(0.013)		(0.214)		(0.025)
		[0.046]		[0.044]		[0.091]		[0.091]
Number of Localities	590	590	590	590	590	590	590	590
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.118	.114	.105	.101	.197	.189	.199	.191
Observations	13,570	13,570	13,570	13,570	2,360	2,360	2,360	2,360

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, focusing on the 590 localities of the 4 Northern Provinces (Zambezia, Nampula, Niassa, and Cabo Delgado). The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(4) report yearly specification estimates (1992-2015). Columns (5)-(8) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 4: **Land Mine Removal and Local Development. Suspected and Confirmed Hazardous Areas**

	Yearly		Demining-Phase Estimation (1992, 1999, 2007, 2015)	
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
Cleared Threats	0.336***	0.036***	0.506***	0.057***
	(0.076)	(0.007)	(0.109)	(0.012)
	[0.072]	[0.077]	[0.116]	[0.128]
Cancelled Threats	-0.045	0.008	-0.163	0.002
	(0.112)	(0.011)	(0.147)	(0.016)
	[-0.007]	[0.012]	[-0.024]	[0.003]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.168	.124	.241	.224
Observations	27,301	27,301	4,748	4,748

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, distinguishing between cleared Confirmed Hazardous Areas (CHAs) and "cancelled" Suspected Hazardous Areas (SHAs). The dependent variable in columns (1)-(3) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (2)-(4) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(2) report yearly specification estimates (1992-2015). Columns (3)-(4) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cancelled Threats is the logarithm of one plus the number of cumulated cancelled suspected hazardous areas (SHA) in the locality in given year (period). All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 5: **Land Mine Removal and Local Development. Intermediate Period**

	Yearly		Demining-Phase Estimation (1992, 1999, 2007, 2015)	
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
First Intervention (dummy)	-0.103	-0.010	-0.351**	-0.039**
	(0.084)	(0.009)	(0.149)	(0.018)
	[-0.012]	[-0.012]	[-0.042]	[-0.045]
Cleared (dummy)	0.421***	0.043***	0.972***	0.107***
	(0.118)	(0.012)	(0.197)	(0.023)
	[0.042]	[0.043]	[0.106]	[0.114]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.166	.121	.239	.22
Observations	27,301	27,301	4,748	4,748

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, distinguishing between first intervention and last intervention at the locality level. The dependent variable in columns (1)-(3) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (2)-(4) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(2) report yearly specification estimates (1992-2015). Columns (3)-(4) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 6: **Land Mine Removal and Local Development. Rural Localities**

	Yearly				Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cleared Threats	0.268***		0.032***		0.429***		0.056***	
	(0.071)		(0.007)		(0.095)		(0.011)	
	[0.069]		[0.075]		[0.116]		[0.134]	
Cleared (dummy)		0.208**		0.029***		0.524***		0.072***
		(0.102)		(0.011)		(0.175)		(0.020)
		[0.024]		[0.031]		[0.068]		[0.082]
Number of Localities	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.161	.159	.12	.117	.228	.223	.217	.212
Observations	24,702	24,702	24,702	24,702	4,296	4,296	4,296	4,296

Notes: This table reports panel fixed effects OLS estimates associating luminosity with landmine clearance, focusing only on rural localities as identified by the Census 1997. The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum positive value of luminosity. The dependent variable in columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality appears to be lit. Columns (1)-(4) report yearly specifications (1992-2015). Columns (5)-(8) focus on 4 specific years that correspond to the three main phases of landmine clearance, namely 1992, 1999, 2007 and 2015. Cleared Threats is the logarithm of one plus the number of accumulated cleared confirmed hazardous areas (CHA) in the locality in a given year. Cleared is year an indicator variable the takes the value of 0 while the locality is contaminated and becomes 1 the (and for all subsequent years) that the locality is landmine free; the indicator equals zero for all localities that were not contaminated. All specifications include locality-specific constants and province-year specific fixed effects (constants not reported). Standard errors in parentheses are clustered at the district (admin 2) level and standardized "beta" coefficients [in brackets]. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 7: **Land Mine Removal and Local Development. Dropping Maputo, Beira, and Nacala**

	Yearly				Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cleared Threats	0.330***		0.037***		0.469***		0.058***	
	(0.073)		(0.007)		(0.099)		(0.011)	
	[0.072]		[0.081]		[0.108]		[0.130]	
Cleared (dummy)		0.375***		0.038***		0.757***		0.083***
		(0.109)		(0.011)		(0.182)		(0.020)
		[0.037]		[0.038]		[0.083]		[0.089]
Number of Localities	1,184	1,184	1,184	1,184	1,184	1,184	1,184	1,184
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.169	.166	.124	.121	.241	.238	.225	.22
Observations	27,232	27,232	27,232	27,232	4,736	4,736	4,736	4,736

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, dropping the largest city in the South (Maputo), Centre (Beira), and North (Nacala). The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(4) report yearly specification estimates (1992-2015). Columns (5)-(8) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 8: **Land Mine Removal and Local Development. Dropping Maputo Province**

	Yearly				Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cleared Threats	0.358***		0.042***		0.512***		0.064***	
	(0.075)		(0.007)		(0.104)		(0.011)	
	[0.080]		[0.092]		[0.121]		[0.146]	
Cleared (dummy)		0.386***		0.039***		0.756***		0.084***
		(0.114)		(0.011)		(0.187)		(0.021)
		[0.041]		[0.041]		[0.088]		[0.093]
Number of Localities	1,109	1,109	1,109	1,109	1,109	1,109	1,109	1,109
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.162	.159	.124	.12	.237	.233	.226	.22
Observations	25,507	25,507	25,507	25,507	4,436	4,436	4,436	4,436

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, dropping localities in the Maputo Province. The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(4) report yearly specification estimates (1992-2015). Columns (5)-(8) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 9: **Land Mine Removal and Local Development. Stopping in 2013**

	Yearly				Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cleared Threats	0.291***		0.031***		0.360***		0.038***	
	(0.073)		(0.007)		(0.098)		(0.011)	
	[0.062]		[0.067]		[0.080]		[0.088]	
Cleared (dummy)		0.306***		0.029***		0.349**		0.031*
		(0.111)		(0.011)		(0.176)		(0.018)
		[0.029]		[0.028]		[0.037]		[0.033]
Number of Localities	1,187	1,187	1,187	1,187	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.157	.154	.105	.103	.221	.217	.176	.172
Observations	26,114	26,114	26,114	26,114	4,748	4,748	4,748	4,748

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, stopping in 2013 and using the value of luminosity as detected by the Defense Meteorological Satellite Program's Operational Linescan System satellite. The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(4) report yearly specification estimates (1992-2015). Columns (5)-(8) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 10: **Land Mine Removal and Local Development. Collapsing Interventions at Site Level**

	Yearly				4 Years (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log - Number of Accumulated Cleared Threats	0.335***		0.037***		0.488***		0.060***	
	(0.078)		(0.008)		(0.105)		(0.011)	
	[0.069]		[0.078]		[0.108]		[0.130]	
Cleared (dummy)		0.367***		0.037***		0.722***		0.080***
		(0.109)		(0.011)		(0.180)		(0.020)
		[0.036]		[0.037]		[0.079]		[0.086]
Number of Localities	1,187	1,187	1,187	1,187	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.168	.166	.124	.121	.241	.238	.224	.219
Observations	27,301	27,301	27,301	27,301	4,748	4,748	4,748	4,748

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, after collapsing demining interventions at the site level. The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(4) report yearly specification estimates (1992-2015). Columns (5)-(8) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized beta coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 11: **Land Mines Removal and Local Development. Dynamic Panel**

	Yearly			
	Log Luminosity		Lit	
	(1)	(2)	(3)	(4)
Cleared Threats	0.156***		0.019***	
	(0.037)		(0.004)	
	[0.033]		[0.042]	
Cleared (dummy)		0.163***		0.018***
		(0.058)		(0.007)
		[0.016]		[0.018]
Log - Luminosity First Lag	0.504***	0.505***		
	(0.019)	(0.019)		
	[0.491]	[0.492]		
Lit (dummy) First Lag			0.387***	0.389***
			(0.018)	(0.018)
			[0.380]	[0.381]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.362	.361	.229	.228
Observations	24,927	24,927	24,927	24,927

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, controlling for the lagged value of luminosity in all specification. The dependent variable in columns (1)-(2) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(2) report yearly specification estimates (1992-2015). Columns (3)-(4) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 12: **Land Mine Removal and Local Development. Affected Only.**

	Yearly				Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit		Log Luminosity		Lit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cleared Threats	0.337***		0.038***		0.511***		0.062***	
	(0.089)		(0.009)		(0.116)		(0.013)	
	[0.074]		[0.084]		[0.120]		[0.143]	
Cleared (dummy)		0.246*		0.024*		0.747***		0.067**
		(0.133)		(0.013)		(0.229)		(0.026)
		[0.026]		[0.025]		[0.086]		[0.075]
Number of Localities	855	855	855	855	855	855	855	855
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.178	.175	.133	.13	.264	.259	.248	.241
Observations	19,665	19,665	19,665	19,665	3,420	3,420	3,420	3,420

Notes: The table reports panel fixed-effects OLS estimates associating luminosity with landmine clearance, focusing on the 855 (786) contaminated localities. The dependent variable in columns (1)-(2) and (5)-(6) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (3)-(4) and (7)-(8) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(4) report yearly specification estimates (1992-2015). Columns (5)-(8) give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. Cleared Threats is the logarithm of one plus the number of cumulated cleared confirmed hazardous areas (CHA) in the locality in given year (period). Cleared is an indicator variable the takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 13: **Land Mine Removal and Local Development. Controlling for New Road**

	Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit	
	(1)	(2)	(3)	(4)
Cleared Threats	0.433***		0.053***	
	(0.097)		(0.011)	
	[0.099]		[0.119]	
Cleared (dummy)		0.719***		0.079***
		(0.180)		(0.020)
		[0.079]		[0.084]
New Road (dummy)	0.003	0.080	0.017	0.026
	(0.204)	(0.204)	(0.023)	(0.023)
	[0.000]	[0.009]	[0.017]	[0.027]
Old Network Improved (dummy)	0.448**	0.521***	0.044**	0.054***
	(0.184)	(0.182)	(0.020)	(0.020)
	[0.052]	[0.060]	[0.050]	[0.060]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.242	.241	.225	.222
Observations	4,748	4,748	4,748	4,748

Notes: The table reports FE effects estimates associating luminosity with demining activities, controlling for the construction of new roads and improvements over the old road network. In columns (1) and (2), we control for an indicator that equals one when a new road was built; in columns (3)-(4), we include a dummy equals one if an old road was improved. All specifications include Locality and Province × Period fixed effects. Standard errors in parentheses are clustered at the District (admin 2) level. Beta coefficients are reported in squared brackets. Squared ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 14: **Long-Run Differences, 2015-1992**

	Log Luminosity				Lit			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Δ Cleared Threats	0.787***		0.753***		0.102***		0.094***	
	(0.165)		(0.127)		(0.018)		(0.014)	
	[0.189]		[0.181]		[0.223]		[0.205]	
Cleared (dummy)		0.968***		0.777***		0.123***		0.089***
		(0.328)		(0.281)		(0.035)		(0.030)
		[0.093]		[0.075]		[0.107]		[0.078]
Paved Road 1973 (dummy)			2.977***	3.165***			0.284***	0.308***
			(0.342)	(0.347)			(0.038)	(0.039)
			[0.249]	[0.265]			[0.216]	[0.234]
Unpaved Road 1973 (dummy)			0.973	1.173			0.166*	0.192**
			(0.793)	(0.840)			(0.084)	(0.090)
			[0.030]	[0.037]			[0.047]	[0.055]
Trail 1973 (dummy)			1.001***	1.110***			0.101***	0.115***
			(0.242)	(0.240)			(0.029)	(0.029)
			[0.102]	[0.113]			[0.093]	[0.107]
Railway 1973 (dummy)			0.856**	0.931**			0.034	0.045
			(0.405)	(0.389)			(0.045)	(0.042)
			[0.063]	[0.068]			[0.023]	[0.030]
Navigable River (dummy)			0.564	0.583*			0.056	0.058
			(0.343)	(0.340)			(0.037)	(0.037)
			[0.051]	[0.053]			[0.046]	[0.048]
Civil War (dummy)			1.764***	2.047***			0.129***	0.165***
			(0.351)	(0.365)			(0.040)	(0.042)
			[0.142]	[0.165]			[0.094]	[0.121]
Cantinas (dummy)			0.707**	0.695**			0.058*	0.057*
			(0.272)	(0.279)			(0.031)	(0.032)
			[0.075]	[0.074]			[0.055]	[0.054]
Log - Population Density 1980			0.505***	0.596***			0.050***	0.062***
			(0.126)	(0.127)			(0.015)	(0.015)
			[0.168]	[0.198]			[0.151]	[0.186]
Log - Luminosity			-0.761***	-0.776***				
			(0.038)	(0.039)				
			[-0.495]	[-0.505]				
Lit (dummy)							-0.833***	-0.850***
							(0.042)	(0.044)
							[-0.500]	[-0.510]
Log - Land			-1.169***	-0.937***			-0.074***	-0.043**
			(0.153)	(0.156)			(0.017)	(0.018)
			[-0.290]	[-0.232]			[-0.166]	[-0.098]
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	.0686	.047	.433	.416	.0704	.0397	.352	.329
Observations	1,077	1,077	1,077	1,077	1,077	1,077	1,077	1,077

Notes: This table reports long-run difference OLS specification estimates associating changes in luminosity (over the period 2015-1992) to demining activities. The dependent variable in columns (1)-(4) is the change in the log luminosity plus the half of the minimum positive value of luminosity. The dependent variable is columns (5)-(8) is the change in the lit indicator. Columns (1)-(2) and (5)-(6) report unconditional specification estimates. Columns (3)-(4) and (7)-(8) include a rich set of control variables, namely: indicator variables that take the value of one when a locality is endowed with features of the 1973 transportation network (paved road, unpaved road, trails, and railway); indicator variables for a navigable river, colonial commercial towns (*Cantinas*), and for localities affected by major civil war incidents. The set of control variables also include log 1980 population density, log luminosity in 1992, and log land area. All specifications include province fixed effects (constants not reported). Standard errors in parentheses are clustered at the district (admin 2) level and standardized "beta" coefficients [in brackets]. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 15: **Land Mine Removal and Local Development. Years × Initial Conditions FE**

	Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity		Lit	
	(1)	(2)	(3)	(4)
Cleared Threats	0.217**		0.038***	
	(0.095)		(0.010)	
	[0.050]		[0.085]	
Cleared (dummy)		0.390**		0.050***
		(0.166)		(0.019)
		[0.043]		[0.054]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
Year x Initial Conditions FE	Yes	Yes	Yes	Yes
R-squared	.286	.286	.249	.247
Observations	4,748	4,748	4,748	4,748

Notes: This table reports panel fixed effects OLS estimates associating luminosity with landmine clearance. The dependent variable in columns (1)-(2) is the log of luminosity plus the half of the minimum positive value of luminosity. The dependent variable in columns (3)-(4) is an indicator that takes the value of one if the locality appears to be lit. Columns (1)-(4) report 4 specific years that correspond to the three main phases of landmine clearance, namely 1992, 1999, 2007 and 2015. Cleared Threats is the logarithm of one plus the number of accumulated cleared confirmed hazardous areas (CHA) in the locality in a given year. Cleared is year an indicator variable the takes the value of 0 while the locality is contaminated and becomes 1 the (and for all subsequent years) that the locality is landmine free; the indicator equals zero for all localities that were not contaminated. All specifications include locality-specific constants, province-year specific fixed effects (constants not reported) times initial characteristics (paved roads in 1973 (dummy), unpaved roads in 1973 (dummy), trails in 1973 (dummy), river (dummy), colonial commercial hubs in 1965 (dummy), and civil war events (dummy)). Standard errors in parentheses are clustered at the district (admin 2) level and standardized "beta" coefficients [in brackets]. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 16: **Heterogeneity. GIS-based Categories. Rural Localities**

	Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
	Cleared Threats		Cleared (Dummy)	
- Road and Railway (100m)	0.585***	0.072***	0.540**	0.068***
	(0.181)	(0.022)	(0.216)	(0.026)
	[0.081]	[0.088]	[0.054]	[0.060]
- Border (10000m)	-0.353*	-0.022	-0.487	-0.012
	(0.204)	(0.027)	(0.360)	(0.048)
	[-0.029]	[-0.016]	[-0.021]	[-0.005]
- Cantinas (1000m)	0.338	0.045	0.385	0.045
	(0.276)	(0.032)	(0.345)	(0.040)
	[0.032]	[0.038]	[0.028]	[0.029]
- Civil War (1000m)	0.372	0.043	0.931**	0.093*
	(0.369)	(0.040)	(0.435)	(0.050)
	[0.025]	[0.026]	[0.041]	[0.036]
- River (100m)	0.188	0.052	0.315	0.048
	(1.243)	(0.145)	(0.885)	(0.106)
	[0.005]	[0.012]	[0.010]	[0.013]
- Village (1000m)	0.623***	0.055***	0.939***	0.094***
	(0.172)	(0.020)	(0.212)	(0.025)
	[0.078]	[0.061]	[0.089]	[0.078]
- Electricity Grid (100m)	0.514	0.046	0.732	0.084
	(0.397)	(0.042)	(0.455)	(0.051)
	[0.026]	[0.020]	[0.026]	[0.026]
- Residual	-0.032	0.007	-0.051	0.012
	(0.093)	(0.011)	(0.168)	(0.020)
	[-0.007]	[0.014]	[-0.006]	[0.013]
Number of Localities	1,074	1,074	1,074	1,074
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.243	.229	.243	.228
Observations	4,296	4,296	4,296	4,296

Notes. This table reports panel fixed effects OLS estimates exploring whether the association between demining activities and local development varies by the type of CHA categories cleared across rural localities. The dependent variable in columns (1)-(2) is the log of luminosity plus the half of the minimum positive value of luminosity. The dependent variable is columns (3)-(4) is an indicator that takes the value of one if the locality is lit. All columns focus at 4 specific years that correspond to the three main phases of landmine clearance, namely 1992, 1999, 2007 and 2015. We split our variable of interest the Number of Accumulated Cleared Threats into seven non-mutually exclusive categories, according to some GIS-based distance thresholds. Columns (1)-(2) report the Log Number of Accumulated Threats split into the seven categories; Columns (3)-(4) report the corresponding dummy version of each GIS category. We classify the different categories as follows: i) Roads and Railways if a threat's centroid is within 100 meters from a road or a railway; ii) Border if a threat's centroid is less than 10,000 meters from the country border; iii) Cantinas if a threat's centroid is less than 1,000 meters from a village with a colonial commercial hub; iv) Civil War if a threat's centroid is in a buffer of 1,000 meters from an event of the Civil War; v) River if a threat's centroid is less than 100 meters distant from a river or lake; vi) Village if a threat's centroid is within 1,000 meters from a village; and Electricity Grid if a threat's centroid is in a buffer of 100 meters from the electric grid or pylon. The Residual category includes all the remaining threats. All specifications include locality-specific constants and province-year specific fixed effects (constants not reported). Standard errors in parentheses are clustered at the district (admin 2) level and standardized "beta" coefficients [in brackets]. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 17: **Heterogeneity. GIS-based Categories.**

	Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
	Cleared Threats		Cleared (Dummy)	
- Road and Railway (200m)	0.398**	0.049**	0.529**	0.062**
	(0.187)	(0.022)	(0.221)	(0.025)
	[0.055]	[0.066]	[0.048]	[0.055]
- Border (20000m)	-0.656***	-0.052**	-0.573*	-0.030
	(0.216)	(0.025)	(0.340)	(0.040)
	[-0.061]	[-0.047]	[-0.024]	[-0.012]
- Cantinas (2000m)	0.586***	0.069***	0.682**	0.077**
	(0.200)	(0.022)	(0.271)	(0.031)
	[0.067]	[0.076]	[0.051]	[0.057]
- Civil War (2000m)	0.749**	0.041	1.566***	0.101**
	(0.296)	(0.029)	(0.399)	(0.041)
	[0.068]	[0.036]	[0.081]	[0.051]
- River (200m)	0.030	0.011	0.350	0.045
	(0.614)	(0.068)	(0.546)	(0.063)
	[0.001]	[0.004]	[0.011]	[0.014]
- Village (2000m)	0.534***	0.048***	0.668***	0.057***
	(0.144)	(0.016)	(0.169)	(0.019)
	[0.085]	[0.075]	[0.064]	[0.053]
- Electricity Grid (200m)	0.332	0.020	0.285	0.024
	(0.286)	(0.032)	(0.386)	(0.043)
	[0.018]	[0.011]	[0.011]	[0.009]
- Residual	-0.316***	-0.014	-0.191	0.001
	(0.108)	(0.012)	(0.165)	(0.019)
	[-0.051]	[-0.022]	[-0.020]	[0.001]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.271	.242	.269	.239
Observations	4,748	4,748	4,748	4,748

Notes. This table reports panel fixed effects OLS estimates exploring whether the association between demining activities and local development varies by the type of CHA categories cleared. The dependent variable in columns (1)-(2) is the log of luminosity plus the half of the minimum positive value of luminosity. The dependent variable is columns (3)-(4) is an indicator that takes the value of one if the locality is lit. All columns focus at 4 specific years that correspond to the three main phases of landmine clearance, namely 1992, 1999, 2007 and 2015. We split our variable of interest the Number of Accumulated Cleared Threats into seven non-mutually exclusive categories, according to some GIS-based distance thresholds. Columns (1)-(2) report the Log Number of Accumulated Threats split into the seven categories; Columns (3)-(4) report the corresponding dummy version of each GIS category. We classify the different categories in the following way: i) Roads and Railways if the centroids of the threats is in a buffer of 200m from a road or a railway; ii) Border if the centroids of threats is less than 20000m from the country border; iii) Cantinas if the centroids of threats is less than 2000m from a village with a colonial commercial hub; iv) Civil War if the centroids of the threat is in a buffer of 2000m from an event of the Civil War; v) River if the centroids of the threat is less than 200m distant form a river or lake; vi) Village if the threat centroid is in a buffer of 2000m from a village; and Electricity Grid if the centroid of the threat is in a buffer of 200m from the electric grid and pylons. The Residual category includes all the remaining threats. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 18: **Heterogeneity. Report-based Categories.**

	Demining-Phase Estimation (1992, 1999, 2007, 2015)			
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
Cleared Threats:				
- Road, Railway, Bridges	-0.160	0.001	-0.298	-0.015
	(0.234)	(0.026)	(0.230)	(0.027)
	[-0.014]	[0.001]	[-0.025]	[-0.012]
- Military	0.375	0.036	0.420*	0.036
	(0.243)	(0.028)	(0.232)	(0.024)
	[0.030]	[0.029]	[0.031]	[0.026]
- Protection Ring & Residential	0.329**	0.031*	0.436*	0.038
	(0.141)	(0.016)	(0.226)	(0.026)
	[0.039]	[0.036]	[0.034]	[0.029]
- Forest & Bush	-0.020	0.013	0.254	0.042
	(0.313)	(0.037)	(0.300)	(0.036)
	[-0.001]	[0.007]	[0.013]	[0.021]
- Footpath	-0.432**	-0.027	-0.316	-0.013
	(0.208)	(0.023)	(0.205)	(0.024)
	[-0.040]	[-0.024]	[-0.023]	[-0.009]
- Farm	0.253	0.035	0.296	0.042
	(0.218)	(0.025)	(0.234)	(0.027)
	[0.021]	[0.028]	[0.022]	[0.030]
- Water Supply	-0.745	-0.089	-0.768	-0.076
	(0.480)	(0.054)	(0.465)	(0.058)
	[-0.030]	[-0.035]	[-0.030]	[-0.029]
- Electricity Pylons	0.108	-0.002	0.467	0.009
	(0.199)	(0.022)	(0.570)	(0.057)
	[0.006]	[-0.001]	[0.013]	[0.002]
- Public Infrastructure	0.710**	0.079**	0.683**	0.083***
	(0.309)	(0.032)	(0.290)	(0.031)
	[0.053]	[0.057]	[0.047]	[0.056]
- River	0.544*	0.047	0.453	0.042
	(0.319)	(0.034)	(0.330)	(0.033)
	[0.027]	[0.023]	[0.024]	[0.022]
- Border	-0.452	-0.037	-0.338	-0.026
	(0.884)	(0.114)	(1.049)	(0.133)
	[-0.009]	[-0.007]	[-0.006]	[-0.004]
- Not Classified	0.351**	0.039**	0.567***	0.063***
	(0.154)	(0.016)	(0.168)	(0.018)
	[0.058]	[0.064]	[0.060]	[0.065]
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.248	.23	.248	.231
Observations	4,748	4,748	4,748	4,748

Notes. The table reports reports panel fixed-effects OLS estimates exploring the heterogeneity of the effect of demining activities on local development according on the type of CHA categories as described by deminers' reports. The dependent variable in columns (1)-(3) is the log of luminosity plus the half of the minimum value of luminosity. The dependent variable is columns (2)-(4) is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). All columns give (7-year) period estimates (1992-1999, 2000-2007, 2008-2015) that correspond to the three main phases of landmine clearance. We split our variable of Number of Accumulated Cleared Threats into twelve non-mutually exclusive categories, according to report-based classification. We classify the different categories in the following way: i) Roads, Railways, and Bridges; ii) Military iii) Protection Ring & Residential ; iv) Forest and Bush; v) Footpath vi) Farm; vii) Water Supply; viii) Electricity Pylons; ix) Public Infrastructure; x) River; xi) Border; xii) Not Classified. The Not Classified category includes all the remaining threats for which a report description was not provided. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 19: Heterogeneity on Locality Characteristics

	Panel A. All Localities			
	Transportation Network		Colonial Cantinas	
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
Cleared (dummy)	-0.408*	-0.028	0.223	0.032
	(0.245)	(0.030)	(0.211)	(0.023)
	[-0.045]	[-0.030]	[0.024]	[0.034]
Cleared (dummy) × Unpaved & Trail	0.968***	0.097***		
	(0.244)	(0.029)		
Cleared (dummy) × Paved & Rail	2.358***	0.216***		
	(0.334)	(0.039)		
Cleared (dummy) × Cantinas			0.842***	0.081***
			(0.225)	(0.025)
Number of Localities	1,187	1,187	1,187	1,187
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.254	.23	.242	.222
Observations	4,748	4,748	4,748	4,748
	Panel B. Rural Localities			
	Transportation Network		Colonial Cantinas	
	Log Luminosity	Lit	Log Luminosity	Lit
	(1)	(2)	(3)	(4)
Cleared (dummy)	-0.356	-0.023	0.047	0.020
	(0.236)	(0.029)	(0.198)	(0.023)
	[-0.046]	[-0.026]	[0.006]	[0.023]
Cleared (dummy) × Unpaved & Trail	0.677***	0.075***		
	(0.236)	(0.028)		
Cleared (dummy) × Paved & Rail	2.146***	0.224***		
	(0.336)	(0.040)		
Cleared (dummy) × Cantinas			0.781***	0.085***
			(0.232)	(0.026)
Number of Localities	1,074	1,074	1,074	1,074
Locality FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
R-squared	.239	.223	.227	.215
Observations	4,296	4,296	4,296	4,296

Notes: The table reports FE effects estimates associating luminosity with demining activities, allowing for heterogeneity at locality characteristics such as i) localities non-connected vs connected through unpaved roads and trails vs connected via paved roads and railways to the colonial transportation network [column (1)-(2)], iii) and localities with no presence of colonial Cantinas vs localities with colonial Cantinas [column (3)-(4)]. In columns (2), (4), and (6), the dependent variable is an indicator that takes the value of one if the locality emits some detectable from the satellite light (lit). Columns (1)-(10) report yearly specification estimates (1992-2015). Cleared is an indicator variable that takes on the value of 0 when the locality is contaminated and equals one following a locality's clearance of all confirmed hazardous areas (CHA); the indicator equals zero for all localities that were not contaminated. Unpaved& Trail is a dummy variable that takes value one if the localities is connected with (at least) an unpaved road or (at least) trail to the transportation network in 1973. Paved& Rail is a dummy variable that takes value one if the localities is connected with (at least) a paved road or (at least) a railway to the transportation network in 1973. Cantinas is a dummy variable that takes value one if at least one colonial Cantina is present in the locality. All specifications include locality fixed-effects and province-specific year (or period) fixed effects (constants not reported). The table reports clustered at the district (admin 2) level standard errors (in parentheses) and standardized "beta" coefficients (in square brackets). ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

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