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The Demographic Decline of the Lobizón in a Low-Fertility World

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Abstract - Résumé

Abstract

Over the past half-century, declining fertility rates have reshaped family structures worldwide, leading to unforeseen demographic consequences—among them, the dramatic decline of the lobizón, the legendary seventh son of South American folklore, cursed to turn into a wolf when a Friday meets the full moon. Using official data to examine fertility trends, we analyze the differential decline in the probability of lobizón occurrences across regions and countries, highlighting how varying fertility transitions have shaped their demographic fate. We estimate the annual number of lobizon births emerging in recent years and project their future trajectory, offering a rare quantitative glimpse into the dwindling ranks of these supernatural beings. Finally, the paper discusses the broader implications of fertility decline for the sustainability of folklore, questioning whether policymakers should support stronger family policies—not only to avoid the lowest-low fertility, but also to preserve the richness of supernatural biodiversity.

Keywords: Fertility decline, Demographic transition, Lobizón, Family policies, South America

Résumé

Au cours du dernier demi-siècle, la baisse des taux de fécondité a profondément transformé les structures familiales à travers le monde, entraînant des conséquences démographiques imprévues – parmi lesquelles le déclin spectaculaire du lobizón, ce septième fils légendaire du folklore sud-américain, condamné à se transformer en loup lorsque le vendredi coïncide avec la pleine lune. À partir de données officielles sur les tendances de la fécondité, nous analysons la diminution différenciée de la probabilité d'apparition des lobizones selon les régions et les pays, montrant comment les transitions démographiques ont façonné leur destin. Nous estimons le nombre annuel de naissances de lobizones ces dernières années et projetons leur trajectoire future, offrant ainsi un rare aperçu quantitatif du déclin de ces êtres surnaturels. Enfin, l'article interroge les implications plus larges de la baisse de la fécondité pour la pérennité du folklore, et questionne la nécessité pour les décideurs politiques de soutenir des politiques familiales renforcées – non seulement pour éviter les taux de fécondité extrêmement bas, mais aussi pour préserver la richesse de la biodiversité surnaturelle.

Mots-clés : Déclin de la fécondité, Transition démographique, Lobizón, Politiques familiales, Amérique du Sud.

1. Introduction

Throughout human history, myths and legends have served as cultural anchors—stories that help explain the unknown, reinforce norms, or simply entertain. Some of them depend on demographic trends. That is the case of the South American legend of the *lobizón*: the seventh son born into a family is said to become a werewolf, cursed to roam the countryside. According to tradition, the transformation occurs specifically on Fridays when the moon is full, a moment charged with ominous power.

The werewolf is wild, intense, and scary, but rests on a very specific demographic condition: the birth of a seventh son. As fertility rates around the world decline dramatically, these once-plausible family structures are becoming increasingly rare. With the global spread of lowest-low fertility levels, the *lobizón* might soon find himself not only mythological but statistically obsolete.

This paper examines how declining fertility reshapes the conditions for the *lobizón*. While the broader consequences of fertility decline are well documented—ranging from population aging to shrinking labor forces—its implications for the ecology of myth have received far less attention. We situate our analysis within a post-transitional demographic landscape. Countries across Latin America, Asia, and Europe now report below-replacement fertility ($TFR < 2.1$), and instances of lowest-low fertility ($TFR \leq 1.3$) are increasingly common. Even in regions where total fertility remains above replacement, the downward trend is unmistakable.

In such contexts, the idea of having seven children, let alone seven sons, belongs increasingly to the realm of historical demography or imaginative fiction. As a result, the number of *lobizones* is projected to decline despite the continued growth of the world population well into the end of this century. We present a model of *lobizón* births, using empirical data from recent years and projections into the foreseeable future, to illustrate how fertility decline reduces the statistical likelihood of myth-generating family structures. In a world of shrinking families and careful reproductive planning, the supernatural may be one more casualty of the demographic transition.

2. Background

2.1. Fertility decline around the world

Over the past seven decades, global fertility has undergone a profound transformation. The Total Fertility Rate (TFR) declined from approximately 5 children per woman in 1950 to around 2.25 by 2024—a major demographic shift. As of 2024, more than half of the world's population lives in countries with fertility below replacement level (WPP 2024). But this transition has followed uneven geographic trajectories. Fertility began to fall in Western Europe and North America during the mid-20th century. Several East Asian countries—China, Japan, South Korea—experienced faster and more abrupt declines. In recent decades, Latin America and Southeast Asia have also seen steep reductions, driven by urbanization, rising educational attainment and standard of living, and expanded

access to reproductive health services.

One of the most remarkable demographic developments in recent decades has been the emergence—and, in many cases, the consolidation—of what is known as *lowest-low fertility*, defined as a total fertility rate (TFR) below 1.3. Initially, this phenomenon was considered both exceptional and temporary, confined mainly to a handful of countries in Southern and Eastern Europe (Kohler et al., 2002). However, over time, this extremely low fertility level has persisted in several contexts and even spread to new regions, prompting more profound interest among demographers. Some scholars anticipated this trend, warning of the potential onset of a “Low Fertility Trap,” in which multiple self-reinforcing mechanisms—such as economic uncertainty and changing family norms—could interact to sustain or further lower fertility over time (Lutz et al., 2006).

This pattern is now firmly established in parts of East Asia and has also spread to other regions. In 2024, South Korea’s TFR fell to approximately 0.78, while China’s remained near 1.0—levels historically associated with episodes of acute crisis but now increasingly common (UNDESA 2024). Meanwhile, Latin America has experienced the sharpest fertility decline globally over the past decade (Pardo et al., 2025). The regional TFR now stands at 1.78, with 18 out of 25 countries below replacement level. Several countries — including Colombia, Puerto Rico, Costa Rica, and some Southern Cone countries, such as Uruguay and Chile, where the werewolf myth originated — have entered the lowest-low fertility range (Table 1)

Table 1. Total Fertility Rate by World Region and Selected Countries (Latest Data)

World	2.25
South Korea	0.78
China	1.01
Southern Europe	1.29
Northern/Western Europe	1.48
Latin America	1.78
Chile	1.03
Uruguay	1.20
Argentina	1.40

Source: UNDESA 2024 and National Statistical Offices

These fertility levels are not only reducing cohort sizes but also reshaping the distribution of fertility across individuals. As the average number of children per woman declines, a growing share of women remains childless, while fewer progress to having two or more children. In many low-fertility societies, the modal family size has shifted from two children to one, and parity progression beyond the first child has become increasingly selective—often linked to socioeconomic status, partnership stability, and institutional support for parenthood (Wilkins 2019), or even societal shifts such as an endemic uncertainty (Vignoli et al. 2020).

This shift has significant implications for the structure of future populations. Rising rates of permanent childlessness, coupled with smaller completed family sizes among parents, contribute to a compressed fertility distribution increasingly concentrated at the lower end. In countries like South Korea, Japan, and parts of Southern Europe, recent birth cohort data show that a substantial proportion of women—often exceeding 20%—are projected to remain childless, while the share of large families (three or more children) continues to shrink (Boydell et al. 2023). These changes not only affect population size but also have consequences for intergenerational support, kinship structures, and social policy.

2.2. The *lobizón* in a low fertility world.

Despite its popularity, the *lobizón* has received little—if any—attention in demographic literature. Until now.

3. Data and methods

We assume that, in each country and year, the distribution of births by parity is a function of the contemporaneous total fertility rate (TFR). Specifically, higher-order births decline geometrically as fertility decreases.

Let $w_i(TFR_t)$ denote the proportion of births of order i in year t , modeled to follow a geometrically declining structure in higher orders as TFR declines, and were cross-validated using empirical birth-order distributions from HFD and DHS data matched to different fertility levels.

The probability that a randomly observed birth in year t corresponds to a seventh-born son is therefore:

$$w_7(TFR_t) \cdot p$$

Plus encore que les questions d'homogamie sociale ou d'endogamie spatiale, ce qui nous im-porte ici, c'est aussi la question de la temporalité des mariages (englobant la question de la pé-riode du mariage, mais aussi du moment auquel il survient dans le parcours de vie individuel). De façon plus ou moins explicite, les mariages étaient aussi encadrés par un ensemble de pres-crits sociaux, culturels et économiques, notamment en lien avec les périodes durant lesquelles celui-ci était théoriquement « proscrit » (Perrenoud, 1983; Matsuo & Matthijs, 2018).

$$P(\text{birth is seventh son}) = \sum_{i=7}^{15} w_i(TFR_t) \cdot p$$

The resulting probability—explicitly conditioned on the country-year TFR—is applied to the total number of births recorded in that year (UNDESA, 2024) to obtain the estimated number of seventh sons.

It is therefore reasonable to expect that a population with a TFR of 7 will exhibit approximately 1.4% of births corresponding to future *lobizón* candidates, whereas a population with a TFR of 2 will display only about 0.01%. In any case, the absolute number of seventh-born sons will also depend on the total number of births, which in turn is shaped by overall population size and, crucially, by the number of women in peak reproductive ages.

Even if we were to imagine an undesirable world with sex selection at birth in favor of males—for instance, a sex ratio at birth of 120 like that observed in some regions of China (Guilmoto 2015)—we would not observe a substantially larger number of annual births of lobizones, unless this occurred in the context of the highly unlikely combination of a total fertility rate of 2.1 and a volume of births comparable to that of China, more than 9 million annually. Only in that case, sex selection would notably increase the *annual number of lobizón births*.

Lobizón demography should also focus on trajectories in the Southern Cone, where the myth originated (Figure 2). Particularly Argentina and Paraguay, reported substantial numbers of *lobizones* throughout the 20th century due to relatively high fertility rates and a considerable population. In 1970, Argentina, Chile, and Paraguay accounted for hundreds of 000 new annual *lobizones*, accumulating into stocks reaching tens of thousands. By 2020, every Southern Cone country was virtually at zero, except for Paraguay, which was still witnessing dozens of new *lobizones* per year due to its comparatively not so depressed fertility rate. In 2070, with every country still with zero or very close, Paraguay and Argentina will remain above 5 new annual *lobizones*, as a very modest hotspot in the region.

4. Regional and global trends in the probability of *lobizones*

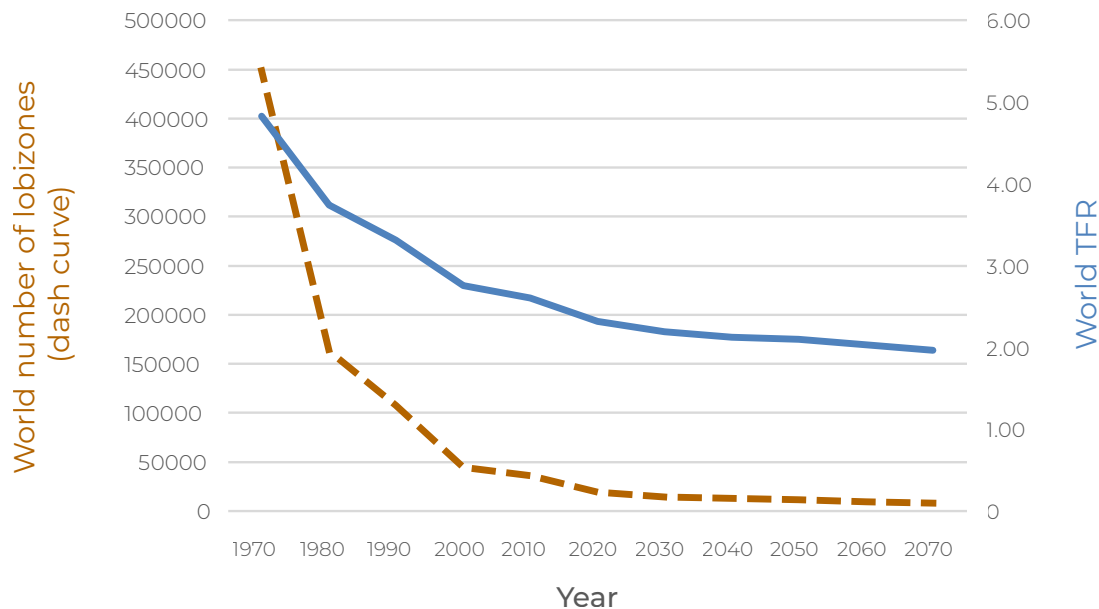
4.1. The Statistical Endangerment of Lobizones

Estimating the stock of *lobizones* in each country may seem the most straightforward approach. For example, the most recent Uruguayan census indicates that the country had 2,378 *lobizones* in 2023 (estimations with data from INE 2024). However, the scale and distribution of this phenomenon become much clearer when long-term trends in annual *lobizón* births are examined. While population stocks describe the size of a species at a given point in time, they are the accumulated outcome of past demographic processes. Annual births, by contrast, capture current reproductive dynamics. For an endangered species, extinction does not begin when the stock collapses, but when reproduction falls below sustainable thresholds. The figures below illustrate the global decline in the estimated number of annual *lobizón* births in each decade from 1970 to 2070, closely mirroring global fertility trends, with the sharpest decrease occurring between 1990 and 2020, a period marked by widespread fertility transition in Latin America and parts of Asia (Figure 1a), alongside the trend observed in countries that have historically recorded the highest numbers (Figure 1b).

While the total number worldwide stood at approximately 450,000 in 1970, this figure is projected to fall to slightly below 8,000 by 2070—less than 2% of what it was. . Among the top *lobizón*-rich countries, the steepest reductions are observed in China and India, both showing impressive declines: from huge numbers to no *lobizón* births at all in the former case, and nearly 335 annual *lobizón* births in the latter. This reflects the so-called one-child policy in China, but a pure fertility reduction based on reproductive behavior in India. A similar path is followed by countries from very different regions—Brazil, Bangladesh, and Indonesia—while only Pakistan and Nigeria still have fertility rates high enough to sustain around 800 annual *lobizón births* each at the end of the period.

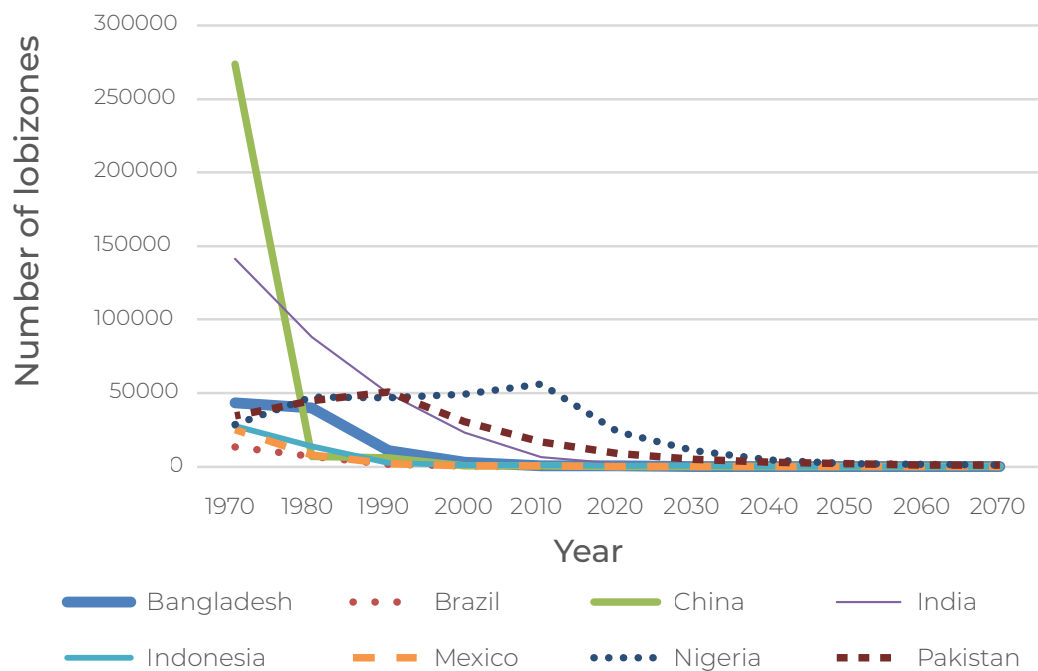
Figure 1. Annual births of lobizones (1970-2070):
World and lobizón-rich countries

(a) Annual Global Lobizón Births and the Total Fertility Rate (1970-2070)

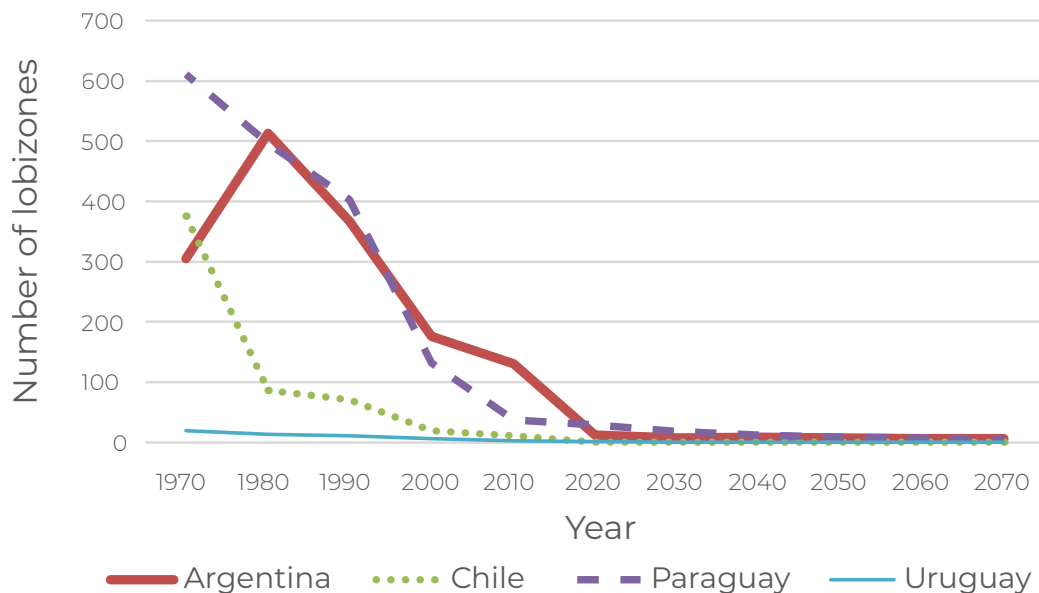


Source: Own calculation based on UNDESA (2024)

(b) Lobizón-rich countries (1970-2070)



Source: Own calculation based on UNDESA (2024) and National Statistical Offices

Figure 2. Annual births of *lobizones* (1970-2070): Southern Cone countries.

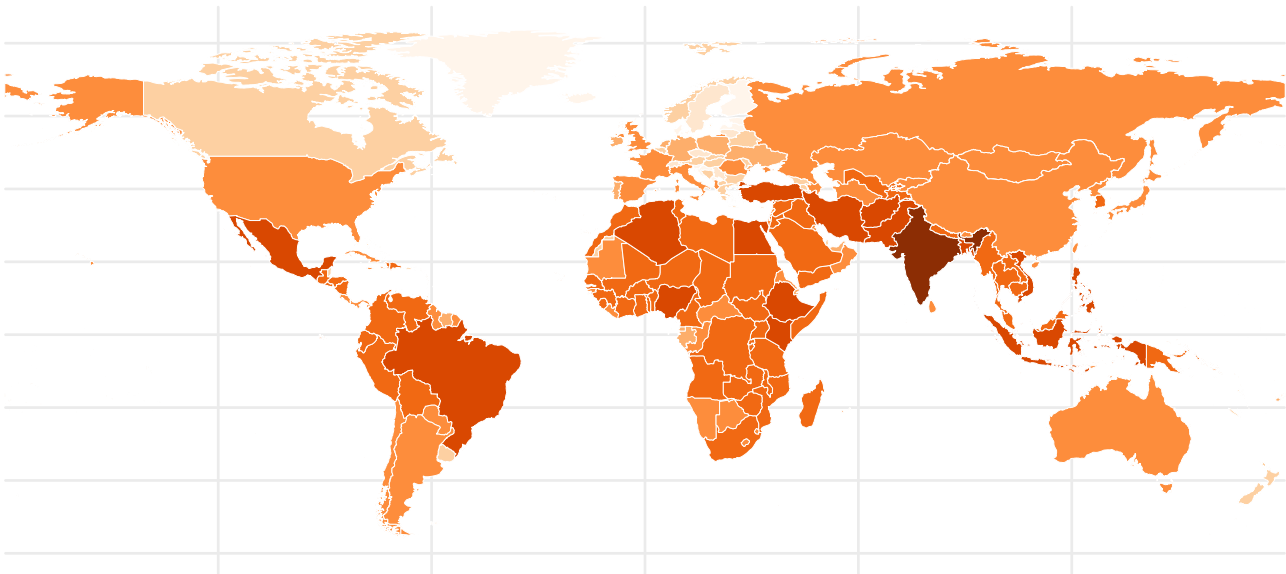
Source: UNDESA (2024) and National Statistical Offices

The absolute number of new *lobizones* does not depend solely on fertility levels, but also on the volume of births, which is also determined by the size of the population of women of reproductive age (15–49 years). As such, demographic dynamics such as population aging and the shrinking of reproductive cohorts compound the effects of fertility decline, further reducing the statistical likelihood of *lobizón* births. In several countries, even maintaining replacement-level fertility would not suffice to sustain previous numbers, due to reductions in the number of potential mothers.

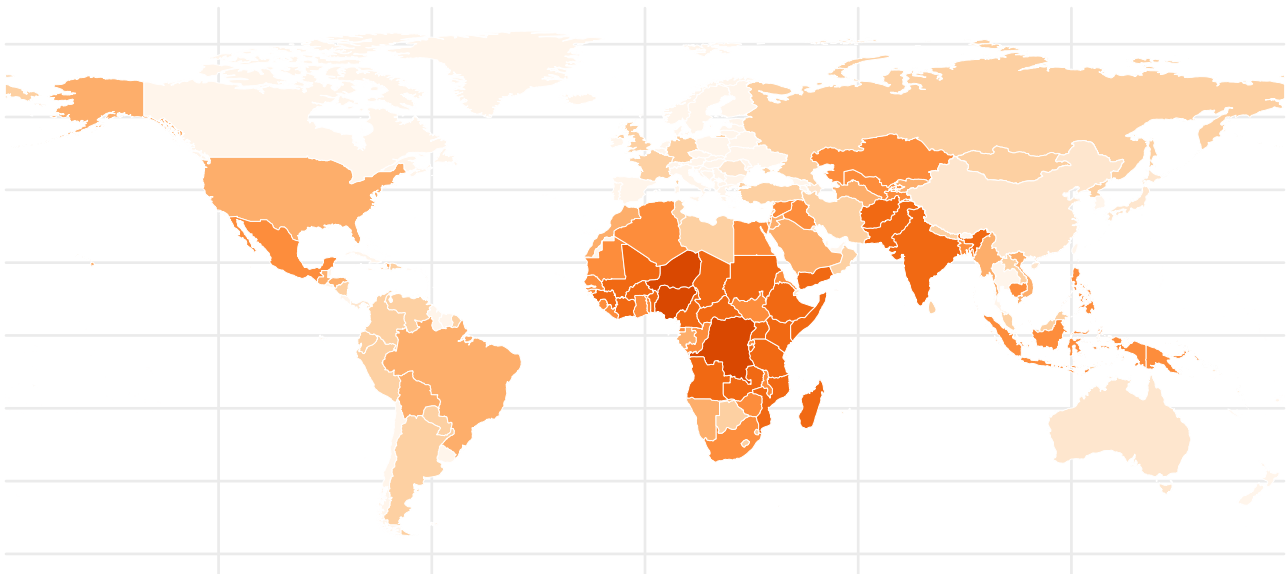
The geographical distribution of *lobizón* births over time is shown in Figure 3, through a series of world maps for the years 1970, 2020, and 2070. In 1970, *lobizones* were estimated to exist across nearly all world regions, with high concentrations in Latin America, parts of Eastern Europe, and Sub-Saharan Africa. By 2020, the number of countries with significant numbers had shrunk considerably. Most of Europe and the Americas exhibit negligible levels, and projections for 2070 indicate a continued decline. By the end of the 21st century, Africa will remain the only region where *lobizones* are projected to be born in any significant annual numbers. However, even there, the numbers are expected to remain far below historical levels.

Figure 3. Annual *Lobizón* births by country

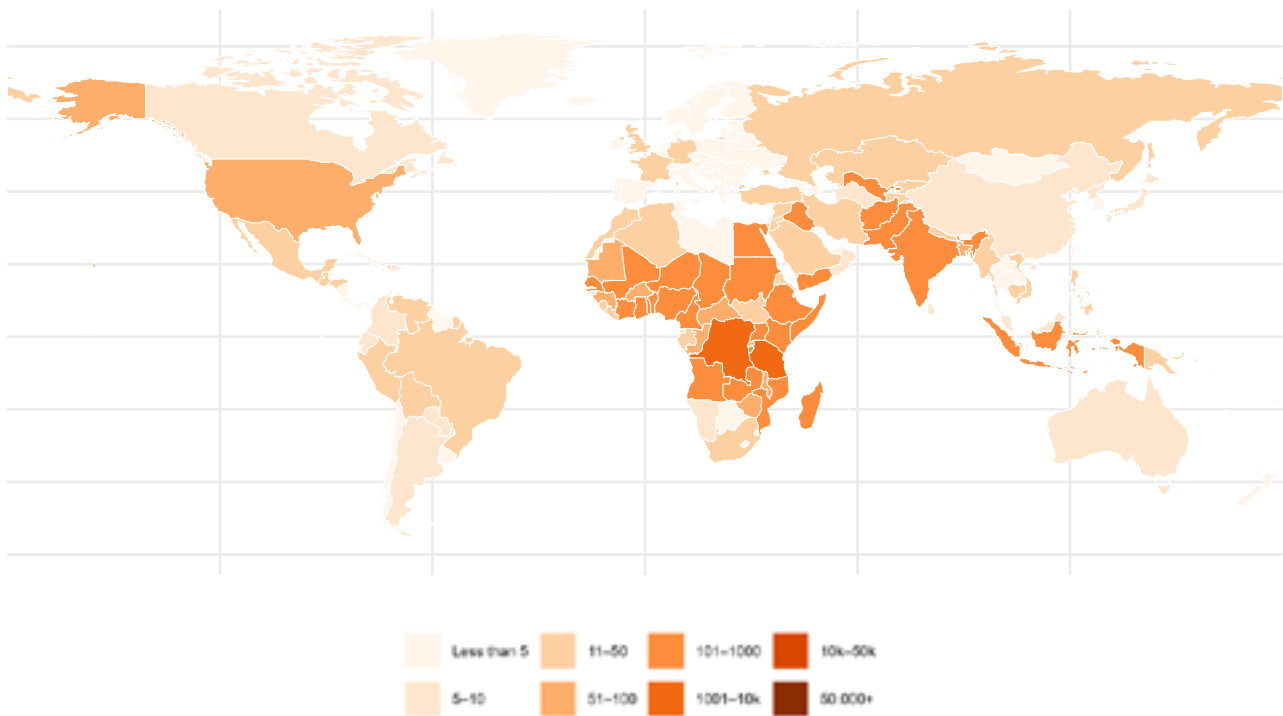
(a) 1970



(b) 2020



(c) 2070



Source: Own elaboration, based on UNDESA (2024)

4.2. The Redistribution of Lobizón Births and the Onset of Extinction

In 1970, the highest proportions of annual births resulting in *lobizones* — over 2% of total births%—were recorded in a diverse group of countries, including Algeria, Kenya, Libya, Yemen, Rwanda, and Jordan. At those rates, the probability that one's newborn nephew would be a lobizón could not be dismissed as trivial. Comparable levels persisted in Niger and Somalia even by the end of the century. All these countries stood out not only for their elevated rates but also for the striking geographic and cultural variety they represented.

By the 2020s, the map looks drastically different. *Lobizón* births have become confined to the remaining pockets of high fertility: Sub-Saharan Africa and parts of South Asia. In these regions, the arrival of a seventh son remains demographically somehow plausible, ensuring the myth's survival. Meanwhile, across Europe, East Asia, and the Americas, the phenomenon has faded into statistical near-impossibility. Full moons now pass unnoticed; the cycle remains, but the subject is gone.

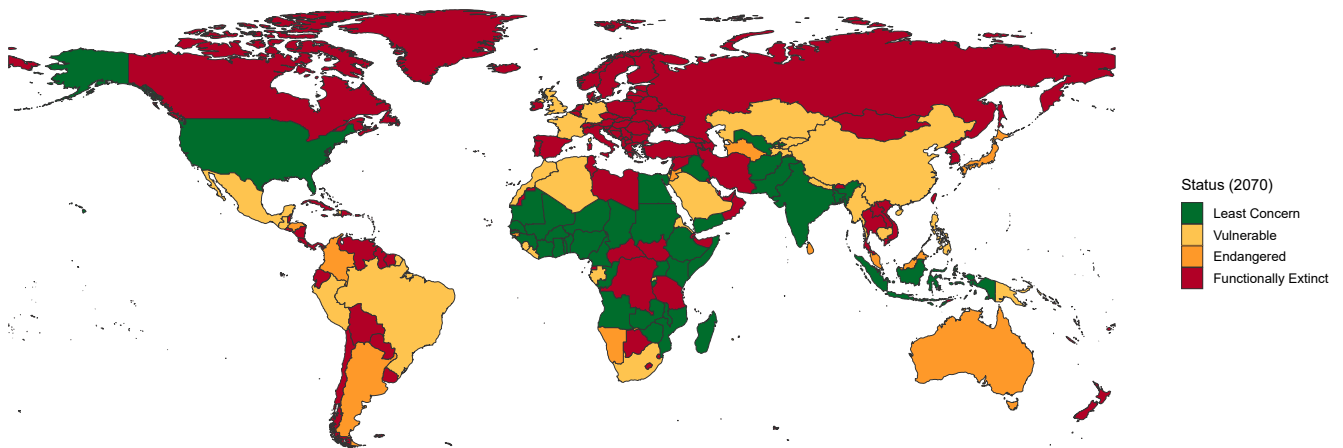
As stated above, by 2070, the shift will be nearly absolute. No country is projected to exceed a 0.042% lobizón birth rate. In absolute terms, the Democratic Republic of Congo (DRC) would dominate, with an estimated 2,297 newborn lobizones—by far the largest concentration on Earth—while Chad may retain the highest relative share, just above 0.04%.

Out of 242 countries worldwide, 167 are projected to record ten or fewer annual lobizón births, and 86 will register zero. The roughly 7,945 lobizón births still projected globally for 2070 will be highly concentrated: the Democratic Republic

of Congo, Tanzania, Pakistan, Angola, and Nigeria together will account for around 5800, nearly three quarters of the world total. In contrast, entire regions will face near-total depletion, registering either no *lobizón* births or only a token handful each year, with projected totals of 98 for Europe and 344 for Latin America. The idea that humanity could disappear due to low fertility is nonsensical and alarmist (Gietel-Basten 2019), but for *lobizones* extinction is not speculative—it is underway. No seventh son, no werewolf.

At this pace, lobizones would need to be classified as a vulnerable, endangered, or even functionally extinct species across most regions of the world. Figure 4 reinforces the highly uneven geography of this demographic decline by mapping these conservation-style categories, making clear where the species persists and where it has virtually disappeared. It also offers practical guidance for the committed field researcher: those wishing to observe the lobizón—its habits, behaviors, and cultural adaptations—would need to relocate to the few remaining demographic strongholds.

Figure 4. Projected global status of Lobizones, 2070.



Source: Own elaboration, based on UNDESA (2024)

Note: Least Concern = More than 50 annual births of *Lobizones*; Vulnerable = More than 10 and less than 50 annual births of *Lobizones*; Endangered = More than 5 and less than 10 annual births of *Lobizones*; Functionally Extinct = Less than 5 annual births of *Lobizones*

The creature of Latin American folklore will find its last refuge in Central Africa. Demography, in this case, is destiny. Soon, folklorists and data scientists will outnumber the creatures they study. Policies may debate family allowances or reproductive incentives, but the creature shaped by birth order and high fertility will vanish between decimal points. The real question is no longer if the *lobizón* will disappear, but when the final seventh son will be born—and whether anyone will still be watching the moon when he does.

5. Discussion

The decline in fertility rates is quietly eroding the demographic foundations of the lobizón myth. Beyond the overall decrease in their numbers, the *lobizón* population is undergoing a notable compositional shift. As birth rates remain low across most societies, a growing proportion of *lobizones* are now likely to emerge from minority groups with persistently high fertility—such as the Hutterites. Long known in demographic literature for providing empirical benchmarks of natural fertility, the Hutterites may soon acquire a new kind of notoriety as primary contributors to the continuity of lycanthropic folklore. In this context, the rise of the Hutterite werewolf is less a folkloric curiosity than a demographic inevitability.

In light of these developments, a pressing question emerges: should pronatalist policies be extended to encompass the needs of mythological populations? While current demographic debates focus on labor force sustainability and pension systems, the silent erosion of folkloric biodiversity has gone largely unnoticed. The dwindling number of seventh sons—critical to the perpetuation of the *lobizón* lineage—illustrates how low fertility can have unexpected cultural side effects. For instance, in 1974, Argentina passed a law granting certain benefits to seventh-born sons—including the symbolic godparenthood of the President and educational scholarships—to prevent discrimination or social stigma associated with the *lobizón* myth. From this perspective, a shrinking *lobizón* population may even offer a modest fiscal upside: fewer seventh sons, fewer scholarships to fund.

This contraction of mythological lineages carries cultural costs that extend even into fictional educational systems. As the pool of lycanthropic individuals diminishes, future generations at institutions such as Hogwarts may face an unexpected pedagogical deficit: the absence of professors like Remus Lupin. His tenure remains a reminder of the distinctive academic and moral contributions that werewolves can offer.

More widely, the demographic shifts associated with falling birth rates may be reshaping the mythopoetic landscapes that depend on large, child-rich populations. Future research might well explore reproductive trends among dragons and other birth-order-linked folkloric figures—such as the sixth daughter in several European traditions, often believed to inherit gifts of divination or healing—whose long-term viability may also be shaped by contemporary demographic decline, much to the dismay of mythological conservationists everywhere.

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