Sibaté, a Colombian town poisoned by asbestos

Since 2014, there have been numerous articles in the Colombian press reporting illness or illness-related deaths among asbestos workers, members of their families and even individuals with no connection to the asbestos industry who were living ordinary lives – all in the small town of Sibaté. The increasing media interest prompted a team of researchers to study this mysterious town which appeared to be invisibly poisoning its inhabitants.

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The northern part of Sibaté, with the Laguna del Muña visible in the distance (Colombia).
Image: © Lysaniuk, February 22, 2019
Sibaté is a Colombian town with a population of just under 40,000, founded in 1967 when it separated from the neighbouring municipality of Soacha. Some 20 or so kilometres south-west of the capital, Bogotá, it lies adjacent to a body of water, the Muña reservoir. The apparent beauty of the location struggles to compensate for the morning stink of a lake that has been polluted ever since contaminated waste from the Bogotá River was re-routed into this reservoir in the late 1960s. In addition to the heavy metals which killed off aquatic life in the Muña, a less immediately obvious toxin has started to make the headlines in recent years: asbestos.

The relationship between this region and the carcinogenic fibres of asbestos is nothing new. For over 70 years, there has been a plant manufacturing asbestos cement products just north of Sibaté. This plant, still operational today, was for decades engaged mainly in the manufacture of roofing slabs, having previously made asbestos cement pipes. Many residents of Sibaté work or used to work in this plant, and may or may not have worked in the asbestos industry. This young journalist had spent her childhood in the Pablo Neruda district and had never worked in the asbestos industry. To Colombians, she is a typical victim of environmental exposure: someone who did not knowingly sign up to an “occupational hazard”.

Several years of poisoned soils

In many of the interviews conducted by Juan Pablo Romas-Bonilla and his team, Sibaté residents talked about major contamination of the town’s subsoil. They reported the depositing, in a number of zones, of a greyish heterogeneous material by dumper trucks: according to these interviewees, the locals knew it was asbestos. These materials—dumped over a period of several years in Sibaté—had allegedly been used to landfill low-lying areas and cover wetlands previously occupied by the waters of the Muña reservoir. Residents mentioned smells from the polluted water and a mosquito problem as reasons why no one had opposed this massive dumping of materials.

Cross-sectional analysis of topographic maps from 1930 to 1978 (performed by the Instituto Geográfico Agustín Codazzi), a digital terrain model and present-day satellite images identified 10 sites where there had been radical changes in use of the land or where low-lying areas might have been landfilled. Soil sampling was carried out at four of the ten sites initially identified. The scientific team anticipated finding asbestos residues in the form of pieces of roof coverings, as one example, but an unexpected discovery brought sampling operations to a halt when a layer of grey, semi-fibrous material appeared. At a depth of between 30 centimetres and a metre below the school, the football ground and the athletics track, this greyish fibrous layer was immediately suggestive of asbestos.

Although precautions had been taken to contain the risks of fibres from asbestos cement waste becoming airborne (continuous wet control using soapy water), the team decided to suspend its sampling operations because the protocol adopted was no longer appropriate. The following day, concrete slabs were poured over the sampling site to minimise any chance that fibres from the layer disturbed by the sampling operations might become airborne again. The samples taken were sent immediately to a specialist laboratory in the USA: the results revealed an asbestos content of up to 12% (chrysotile and/or crocidolite) (Ramos-Bonilla et al., 2019). In addition to the geographical approach aimed at locating the areas of landfill, information was gathered from two participative workshops held together with Sibaté residents in an attempt to model the space-time for this pollution.  

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2. This freedom to decide is very limited in the southern suburbs of Bogotá, which are home to a large concentration of people whose livelihoods are very precarious. The pressing need for a steady job comes first, and all choices are influenced by that.
Although most participants agreed that the two main areas of contamination were the present-day football ground and the athletics track, they all said that the pollution is probably more widespread than it seems. And indeed, whilst these two areas of dumped asbestos seem to have been fairly accurately identified, residents mentioned that many locals had helped themselves directly to the contaminated material and then used it at home as a cladding material or in the foundations of new buildings. A simple walk with local residents showed that this carcinogen was present everywhere, including in household articles (for example, sections of repainted asbestos cement pipes were found to be in use as flowerpots by the front doors of many houses). It is imperative that contamination of the soil – including soil on or very close to the surface – must be mapped accurately using non-invasive methods. Meanwhile, the research team has repeatedly alerted the municipal and departmental authorities and two Colombian ministries to the urgent need for a proper risk management plan to be put in place. This should cover a huge area, continue until the researchers’ study is complete, and operate in accordance with the precautionary principle.

Abnormally high morbidity

The case study conducted by the research team rapidly produced an impression that would be borne out later by the figures: the number of pleural mesothelioma cases seemed particularly high for a population of only 38 000. After phase one of the study, when more than 350 survey questionnaires had been evaluated, a large number of patients with asbestos-related illness – both alive and dead – was recorded: 25 mesotheliomas, 26 lung cancers, 3 ovarian cancers, 1 throat cancer and 7 cases of asbestosis (Ramos-Bonilla et al., 2019). By common agreement, it was decided that fine analysis of the mesothelioma cases should be carried out. Since these were self-reported cases, it was necessary first to confirm the diagnosis so that later calculations could be based on an incontrovertible starting point. Medical records (for 17 of the 25 cases) were thus obtained from the patients or their heirs. The diagnoses were checked by six physicians (five in Colombia, one in Italy). After phase one of the analysis, 15 cases were deemed “definite” by the Colombian doctors. An Italian doctor then gave her assessment: she too categorised 13 cases, only 9 had been living in Sibaté at the time of diagnosis. Subsequent calculations of the age-adjusted incidence of pleural mesothelioma were based on these nine cases only (Ramos-Bonilla et al., 2019).

The study was conducted with meticulous care, which meant that many reported cases were disregarded, but its findings are nevertheless extremely worrying. Although still in the early stages, all the evidence shows that people in Sibaté have been affected by exposure to asbestos, not only at work and in their homes but in the wider environment too. The adjusted calculation of incidences appears very high compared with the figures usually seen in world cancer registries. The findings for Sibaté’s women are comparable to those in Casale Monferrato, the Italian town where a cluster of mesothelioma cases was clearly identified. The findings for men were also very high: higher than those reported in Quebec, for example. The preliminary results of the Sibaté study point very strongly to a mesothelioma cluster in this town.

Help for the community

A number of aspects arising out of this preliminary work point to the need to address the issues not only in greater depth but also on a greater scale. In health terms, the situation as presented in self-reporting by just a fraction of the town’s population already reveals an abnormally high number of cancers. Everything combines to suggest that the first published figures, worrying though they are, are an underestimate of the real threat to the health of Sibaté’s residents. The study, conducted in only three of the town’s neighbourhoods, should be extended to the whole of the town. That means looking at the entire urban centre of Sibaté but also at areas further out from the town centre, such as the Pablo Neruda district (home of the emblematic Ana Cecilia Niño).

A better estimate of the sources of environmental pollution is also required. This means firstly that the extent of landfill work done using materials containing asbestos must be accurately assessed, with care being taken to use non-invasive (scientific) methods and thus avoid making environmental pollution even worse. Another aspect of this pollution analysis is the need to measure concentrations of asbestos fibres in the air. Work on all these tasks has started and has progressed to varying stages. This valuable and essential work must be used as the basis for a risk management plan for environmental pollution in Sibaté: restrictions on soil use, training in good practice, and in situ management of pollution. The members of the international team have already told the Colombian authorities that they are happy to help bring about the necessary transition. Italian experts who officiated at Casale Monferrato have also agreed to take part, with the agreement of the authorities, in the preparation of an asbestos risk management plan for Sibaté.

3. Casale Monferrato is a town in Piedmont where the Eternit group had an asbestos cement plant. Out of a population of less than 40 000, around 2 500 asbestos-related deaths have been recorded in the past 50 years. The plant was closed down in 1987 in response to public protests, but deaths are expected to peak in 2025. See Giampiero Rossi, La Lana della Salamandra: Eternit, La vera storia della strage dell’amianto a Casale, Rome, Edens, 2008 [not available in English].

4. Quebec has long produced and used asbestos on a massive scale. The prevalence of mesotheliomas in its population is among the highest in the world.
A simple walk with local residents shows that this carcinogen is present everywhere, including in urban household articles.

Colombia: Finally, a ban on asbestos

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On 11 June 2019, the Colombian House of Representatives unanimously voted to ban asbestos as of 1 January 2021. Various transitional measures are now being drafted: to develop substitution plans, to help asbestos miners find other jobs, and to ensure proper monitoring of the health and social rights of the thousands of victims of asbestos-related diseases.

Colombia is a country both producing and consuming asbestos. The mineral is used in many different sectors, with the main use being in the production of asbestos-cement building materials for housing and pipes. Workers in the automotive sector are also greatly exposed to asbestos in the production of brake linings and in vehicle maintenance and repairs.

Unions and victim associations, backed by environmental organisations, have been fighting for some fifteen years to get asbestos banned. Back in 2007, Colombian Senator Jesús Bernal Amorocho (Polo Democrático, a left-wing opposition party) put forward a bill banning asbestos. Although he managed to gain a majority in the initial debate, intense employer lobbying persuaded MPs not to conclude the legislative procedure. This scenario has been repeated at least seven times over the past twelve years, blocking the parliamentary initiatives. Various bills have been presented, often with majority cross-party support in the initial debates, only to disappear from parliamentary agendas thanks to the industry’s lobbying and its links to the traditional political establishment.

Over the past ten years, data on the negative health effects of asbestos has mounted, with the number of deaths recorded as being caused by asbestos rising to 1 700 over the past five years. And this figure is in fact much lower than the reality, as the association with asbestos is not declared in the majority of deaths.

Both the extraction of asbestos and the production of asbestos-based materials used to be dominated by multinationals, though with growing Colombian involvement. The main asbestos mine located in Campamento in the province of Antioquia was opened in 1972 by the US corporation Johns Manville. Named “Las Brisas”, this mine has a chequered history. While the resurgence of the civil war in the late 1990s caused the company to abandon its operations there, the mine continued to operate, more or less chaotically, until production stopped briefly in 2011. Operations restarted the following year, this time at the initiative of the Colombian company Bricolsa.

Eternit also played a crucial role in the massive use of asbestos-based building materials, opening further plants in Colombia (in Cali and Barranquilla) in 1944. Although the multinational gradually stopped using asbestos in its European operations, it continued using it in Colombia until 2015, as evidenced by the 300 million square metres of roof tiles produced by Eternit. Some 40 000 kilometres of pipe for water and sewerage also feature asbestos cement. This situation naturally leads to great health inequality, with the majority of homes containing asbestos (estimates speak of 1.5-5 million) inhabited by the poor or people on low incomes. High-priority social housing programmes developed by successive governments in a context marked by cronism and corruption are one cause of the very high use of cement asbestos. Slowly but surely, the use of such materials is releasing asbestos fibres into the atmosphere, constituting a danger for the inhabitants of poor neighbourhoods in particular.

To prevent the bill from being adopted, Senator Alvaro Uribe (the President of Colombia between 2002 and 2010) argued for the defence of jobs in the Las Brisas mine, which happened to be located in his constituency. Uribe remains a leading figure in the Colombian political scene.

The asbestos ban is all the more of a victory considering that it was adopted in a very unfavourable political context for the world of work, following the victory of the pro-Uribe candidate in the second round of the presidential elections in June 2018. The new government includes a large number of ministers from the employer side of industry and business. Assassinations of union activists are commonplace in the country, with the majority going unpunished. Colombia is one of the “ten worst countries for workers in 2019” according to the Global Rights Index 2019 published by the International Trade Union Confederation.

The activism of four women played a major role in achieving the ban on asbestos in Colombia, with the new law bearing the name of one of them, Ana Cecilia Niño. Suffering from an asbestos-caused cancer, this journalist devoted the final years of her life to mobilising the country in favour of a ban on this fatal fibre. She died in July 2017, well before the vote was taken to adopt the ban.