

OSH in oil palm plantations

Workers' risk of exposure to agrochemicals in Colombia, Ghana, and Indonesia

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Summary

Palm oil is the most widely used edible oil globally. Valued at over US\$ 50 billion in 2021, the palm oil industry is projected to grow to US\$ 65 billion by 2027, underscoring its significant economic importance. It also serves as a crucial source of employment, providing jobs for millions of people. However, palm oil production heavily contributes to deforestation and biodiversity loss, particularly in Southeast Asia, where plantations often replace secondary forests. From 2000 to 2016, deforestation linked to palm oil accounted for 25–30% of global forest loss. Furthermore, the sector's reliance on agrochemicals—such as pesticides and fertilizers—poses significant risks to workers and nearby communities, who face daily exposure to hazardous chemicals. This exposure can lead to both acute and chronic health issues, including cancer, neurotoxicity, and reproductive problems, disproportionately affecting vulnerable groups like women and children.

Despite widespread recognition of these risks, comprehensive documentation regarding workers' safety and health in the context of agrochemical exposure remains lacking. To address these knowledge gaps, the International Palm Oil Workers United (IPOWU), with support from Profundo and funding from Mondiaal FNV, conducted a survey among 1,436 oil palm plantation workers in Colombia, Ghana, and Indonesia to assess their risk of exposure to agrochemicals. An analysis of the public and private policies governing occupational safety and health (OSH) and the use of agrochemicals in the palm oil sector was also performed. Oil palm plantation workers are exposed to agrochemicals directly when applying fertilizers or mixing and spraying pesticides, as well as indirectly when performing tasks such as harvesting, replanting, field maintenance, and managing plant waste in areas that have recently been treated with agrochemicals.

This study found that comprehensive policies on chemical safety and occupational health remain lacking, leaving workers without adequate health monitoring, safety training, or protective equipment. In Colombia, Ghana, and Indonesia, regulatory frameworks for agrochemicals and OSH show both strengths and gaps. Despite rather comprehensive laws, compliance is weak due to insufficient oversight and enforcement mechanisms. None of the three countries have ratified key International Labour Organization (ILO) conventions such as C155 (Occupational Safety and Health) and C139 (Occupational Cancer Convention), while other relevant conventions (such as C184 – Safety and Health in Agriculture and C170 – Chemicals Convention) have only been ratified by one or two countries. Against this background, it is not surprising existing national policies often lack specificity regarding commercial plantations, leading to poor worker safety and health standards.

While initiatives like the Roundtable on Sustainable Palm Oil (RSPO) aim to improve practices in the palm oil industry, they face criticism for their limited effectiveness, insufficient monitoring, and failure to comprehensively address worker safety concerns, particularly regarding agrochemical exposure. At the same time, downstream buyers of palm oil often lack dedicated OSH policies for

their suppliers, embedding worker safety commitments within broader frameworks that overlook specific risks associated with agrochemical use, particularly for female workers.

With regard to the survey results, most workers report undergoing regular OSH training; however, gaps exist, particularly in Indonesia, where training effectiveness may need improvement. Most Colombian and Indonesian workers express concern about health risks associated with their tasks. In contrast, many Ghanaian workers do not perceive their work as compromising their safety, which could indicate effective preventive measures. Many workers across Colombia and Indonesia do not report overtime, but a notable portion of Ghanaian workers do, potentially increasing their exposure to health risks. Differences in overtime reporting are also observed between direct and outsourced workers.

Whereas all surveyed workers come in contact with agrochemicals, many displayed significant gaps in awareness regarding their exposure. In Colombia, a considerable number of workers recognised their contact with agrochemicals, whereas fewer in Indonesia and Ghana did, indicating varying levels of awareness across these countries. However, a notable proportion of workers remain uninformed about the specific agrochemicals they use. Many Indonesian and Colombian workers lack essential information, highlighting the need for improved training and communication.

The surveyed workers mentioned a total of 56 different agrochemicals used in the plantations. Among these, one insecticide (Beta-cyfluthrin) and one fertilizer (Zinc phosphide), both used in Indonesia, are classified by the World Health Organization (WHO) as highly hazardous. Additionally, Dicofof, an insecticide used in Indonesia, is severely restricted in the EU, while Kasugamycin, a fungicide used in Colombia, is banned in the EU. Benomyl, another fungicide used in both Colombia and Indonesia, has been withdrawn from the EU market. Alarming, 29 of the reported agrochemicals have hazard classifications that exceed those of the WHO for carcinogenic and mutagenic effects. This situation is concerning, especially given that agrochemicals such as tebuconazole and paraquat continue to be used in Colombia and Indonesia, respectively, despite their known dangers. Notably, the EU has banned the use of paraquat domestically since 2007 but continues to be a significant exporter to Indonesia, highlighting the profit derived from selling dangerous chemicals that it deems too hazardous for its own citizens.

Proper timing for re-entering treated fields is essential for minimising exposure risks. While many workers in Colombia and Ghana adhere to recommended waiting times, a concerning number in Indonesia work during pesticide applications, indicating lapses in safety compliance. Moreover, workers applying fertilizers often enter fields shortly after pesticide applications, increasing health risks. This situation highlights the urgent need for stricter safety measures and heightened awareness of agrochemical exposure.

Most workers reported receiving personal protective equipment (PPE) from their employers; however, some workers in high-risk roles, such as spraying and waste management, noted gaps in provision, highlighting inconsistencies in PPE distribution. A significant number of workers indicated that damaged PPE was not replaced, which raises serious concerns about safety and compliance with the ILO standards that mandate proper maintenance and replacement of PPE at no cost to workers. While many workers did not incur costs for PPE, some Indonesian workers reported having to purchase their own equipment. This situation reflects a failure to meet ILO requirements and places an unfair burden on workers.

Access to washing facilities for PPE is limited, leaving many workers unable to effectively clean their protective gear. This deficiency poses contamination risks not only for the workers themselves but also for their families, who face cross-contamination risks when workers wash their PPE at home due to the lack of facilities at the workplace. Additionally, many workers encounter challenges related to inadequate access to basic sanitation facilities, which undermines their ability to maintain personal hygiene and manage exposure to hazardous chemicals—an essential aspect of worker health and safety.

Further, while a majority of workers are able to perform their tasks while wearing PPE, some experience difficulties. This issue is particularly pronounced among workers in specific roles, indicating a need for better PPE design that accommodates the diverse requirements of different job tasks.

Access to information regarding safety practices is inconsistent among workers. While some reported awareness of daily agrochemical usage, others lacked access to safety labels and data sheets. This discrepancy highlights the need for improved communication and adherence to ILO standards regarding safety documentation. Smoking regulations vary significantly among surveyed countries. While many workers in Colombia and Ghana reported smoking bans on plantations, a portion of Indonesian workers stated they could smoke in certain circumstances. This inconsistency underscores the need for stricter enforcement of smoking policies in areas where hazardous substances are present.

Many workers reported no health symptoms, but headaches and dizziness are common across all regions. This consistency highlights the need for effective health monitoring and targeted preventive measures. Various skin irritations were reported, with blistering noted in Colombia, burning in Ghana, and ulceration in Indonesia. Women frequently reported ulceration, while men experienced more blistering. Many workers linked their symptoms to agrochemical exposure, but uncertainty about causes remains, especially among those with longer tenures in roles like spraying.

A considerable number of workers indicated they had no health issues, yet variations in reported conditions exist. Allergies and gastric diseases were common, with skin injuries particularly noted by Ghanaian workers. The likelihood of reporting no health conditions appears to diminish with increased years of service, suggesting that long-term employment may correlate with the emergence of health issues. Workers with less than a year of service reported better health compared to those employed for 15 years or more.

Gaps in medical screening practices were evident. Many workers in Colombia obtained a medical certificate before employment, while a significant portion in Ghana did not. Regular medical screenings varied widely, indicating barriers such as costs and access to healthcare. Enhancing adherence to screening requirements and improving access to health services are crucial for addressing health issues related to agrochemical exposure.

The findings reveal significant challenges in diagnosing and managing occupational diseases in the palm oil sector. A persistent issue is the difficulty in establishing clear links between diseases and their origins, compounded by poor coordination between occupational health services and general healthcare providers, leading to underreporting and misdiagnosis. There are considerable disparities in medical screening practices. Colombia shows relatively high compliance, while practices in Indonesia and Ghana are inadequate. This inconsistent application often targets only specific high-risk groups, neglecting the broader workforce and failing to ensure comprehensive occupational health coverage.

Transparency regarding medical screening results is a critical issue. Workers often reported not receiving their results, violating their rights to access health information. This lack of transparency hinders workers from taking proactive steps to address potential health issues, undermining the effectiveness of occupational health initiatives. Most workers reported being covered by social security schemes, yet a notable gap exists between direct and outsourced workers, with many outsourced workers lacking full coverage. This disparity underscores the vulnerability of outsourced workers, leaving them inadequately protected in case of occupational diseases or accidents.

A concerning lack of regular inspections by relevant authorities, particularly in Indonesia and Ghana, exacerbates health and safety issues on plantations. This absence of oversight contributes

to negligence in health practices and hampers the collection of robust data to establish links between agrochemical exposure and occupational diseases.

Gendered differences are evident in the experience of exposure risks and PPE use. Many women workers reported difficulties completing their tasks while wearing full PPE compared to men, suggesting that PPE may not be adequately designed for women. This points to the need for inclusive PPE design to enhance safety and comfort for all workers.

Lastly, RSPO-certified plantations demonstrate generally better compliance with OSH practices compared to non-certified plantations, although more certified plantation workers reported paying for their PPE than their non-certified counterparts. Challenges persist, particularly with inadequate PPE washing facilities and hygiene amenities, which pose health risks. Certified plantations offer improved access to safety information, including updates on agrochemicals, and show higher rates of OSH team presence. However, communication gaps remain concerning employer responsibilities for occupational disease reporting, underscoring the need for enhanced training and stricter RSPO oversight to ensure consistent safety standards.