11. Chemical and pest management

SPOTT indicators: Does the company disclose…

71) Commitment to minimise the use of chemicals, including pesticides and chemical fertilisers?
72) No use of paraquat?
73) No use of World Health Organisation (WHO) Class 1A and 1B pesticides?
74) No use of chemicals listed under the Stockholm Convention and Rotterdam Convention?
75) Integrated Pest Management (IPM) approach?
76) Chemical usage per ha or list of chemicals used?

Relevant SDGs

Context

On a global scale, the increased demand for food products has meant an overall increase in chemical input in agriculture. FAOSTAT data shows that fertilizer consumption rose by 22% between 2004 and 2014 – by which time, Indonesia was the fifth highest fertilizer consumer.[1] Oil palm cultivation relies on a variety of chemicals, from fertilizers to herbicides and insecticides. These chemicals pose significant threats to human health and to ecosystems (including to species that act as pollinators of oil palm such as weevils and beetles), and constitute a substantial operational cost to companies.[2] Given these significant risks, companies need to phase out the use of the most hazardous chemicals and reduce the use of other non-listed pesticides and herbicides. Paraquat, though non-listed, is a herbicide of particular concern as its use is widespread in the palm oil industry. It is responsible for water and soil pollution and poses critical health risks to workers through occupational exposure. Other toxic chemicals also pose important health and safety risks to plantation workers, making it necessary for companies to reduce reliance on these products [**for more details see factsheet 13 on labour rights**].

Obligations and expectations

The Stockholm Convention aims to eliminate or reduce the use of specified persistent organic pollutants (or POPs), and is legally-binding to 181 parties (this does not include Malaysia). While paraquat is currently only listed as a Class II substance (moderately hazardous) under the WHO classification,[3] it is banned in over 40 countries, including EU members states where it cannot be used, even with Personal Protective Equipment.[4] Various stakeholder groups and certification bodies such as the RSPO call for a phase out of paraquat.

Glossary

Class 1a and b pesticides
The World Health Organisation (WHO)[3] names four toxicity classes. Class Ia and Ib are extremely hazardous and highly hazardous respectively, while class II and class III are considered 'moderately hazardous' and 'slightly hazardous'. This classification is based on the amount of pesticide – ingested or in contact with the skin – which is sufficient to kill half of the subjects receiving a dose within a set time span (Lethal Dose 50).

Intergrated Pest Management (IPM)
Integrated Pest Management (IPM) or Integrated Pest Control (IPC) are defined by the FAO as measures which aim to keep 'pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment'.[5]

[1]FAOSTAT. [Accessed 2 October 2017]. Available from: fao.org/faostat/en

[2]WWF, FMO and CDC, Profitability and Sustainability in Palm Oil Production Analysis of Incremental Financial Costs and Benefits of RSPO Compliance. 2012. p.25. [Accessed 2 October 2017]. Available from: rspo.org/file/BUSINESS%20CASE_Profitability%20and%20Sustainability%20in%20Palm%20Oil%20Production.pdf

[3]Recommended classification of pesticides by hazard. WHO. 2009. [Accessed 2 October 2017]. Available from: who.int/ipcs/publications/pesticides_hazard/en/

[4] Court of First Instance. Judgment of the Court of First Instance of 11 July 2007.Kingdom of Sweden v Commission of the European Communities. Directive 91/414/EEC. Case T-229/04. [Accessed 2 October 2017]. Available from: curia.europa.eu/juris/liste.jsf?language=en&num=T-229/04

[5]AGP, Integrated pest management, FAO. [Accessed 2 October 2017]. Available from: fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/

Aviva Investors: For an intergrated approach to pest management practice

"We have been engaging with companies and participating in field visits both individually and in collaboration with other investors for several years. Investors now know that it is possible for palm oil companies to increase their productivity while also limiting their chemical input, namely thanks to IPM. The adoption of IPM is also a key way for companies to limit water pollution, to increase staff safety and it contributes to their biodiversity management and conservation efforts. From an investor perspective, the use of IPM by companies is indicative of a company on the right track when it comes to environmental best practice."

Abigail Herron, Global Head of Responsible Investment
AVIVA INVESTORS

Challenges

- Even when applying Integrated Pest Management (IPM) practices, companies can be faced with increased pest damage and may then need to resort to synthetic products to protect their crops. In exceptional circumstances, chemical alternatives are allowed under the Stockholm Convention.
- The effective implementation of IPM requires high levels of coordination between different stakeholders on a plantation in order to ensure consistency in practices.
- Currently, IPM systems are often insufficiently integrated into standard operating procedures (SOPs) and there can be a lack of staff training and outreach.

Best practice for chemical use reduction and the implementation of IPM processes

There are several steps that palm oil companies should follow to implement best practice:

- Companies should refer to the Stockholm Convention[7] and the WHO classification of pesticides by hazard.[8] They should assess whether any product used in any of their plantations is listed under the Convention or classified as class Ia or b. If applicable, companies should establish a plan to phase out the use of any such product.
- The effective management of a company's use of chemical input (fertilizer, herbicide, pesticide) starts with its measurement and making sure the reported quantities used per hectare are commensurate with recommended guidelines and with the identified pests on the concessions.
- Once a baseline is established, companies should set a reduction target and report on the progress towards this target.
- Reduction targets are best achieved with the simultaneous introduction of integrated pest management practices. IPM practices include: preventative practices (such as tool and crop sanitation); monitoring, mechanical controls (such as traps); biological controls (natural substances or vegetal/animal species which negatively affect pest populations). A tried and tested example of IPM practice is the installation of boxes for barn owls (*Tyto alba*), natural predators of rats, which feed on young palm oil trees and on palm fruits.
- Companies should also implement programmes for staff training and outreach on responsible chemical and pest management.

[7]'All POPs listed in the Stockholm Convention', www.pops.int. [Accessed 2 October 2017]. Available from: pops.int/TheConvention/ThePOPs/AllPOPs/tabid/2509/Default.aspx

[8]Recommended classification of pesticides by hazard. WHO. 2009. [Accessed 2 October 2017]. Available from: who.int/ipcs/publications/pesticides_hazard/en/

Other SPOTT indicator framework factsheets in the series

This document is part of a series of factsheets in the publication: *From disclosure to engagement: A guide to the SPOTT indicator framework for assessing palm oil producers and traders*. Below is a full list of the factsheets:

- Factsheet 1: Sustainability policy and leadership
- Factsheet 2: Landbank and maps
- Factsheet 3: Traceability
- Factsheet 4: Deforestation
- Factsheet 5: Biodiversity
- Factsheet 6: HCV, HCS and impact assessment
- Factsheet 7: Peat
- Factsheet 8: Fire
- Factsheet 9: Greenhouse gas emissions
- Factsheet 10: Water
- Factsheet 11: Chemical and pest management
- Factsheet 12: Community and land rights
- Factsheet 13: Labour rights
- Factsheet 14: Palm oil certification
- Factsheet 15: Smallholder support
- Factsheet 16: Supplier selection
- Factsheet 17: Governance and grievances

About SPOTT

SPOTT is an online platform promoting transparency and accountability to drive implementation of environmental and social best practice for the sustainable production and trade of global commodities. SPOTT assessments score some of the largest palm oil producers and traders on the public availability of corporate information relating to environmental, social and governance (ESG) issues.

Reframed as the **Sustainability Policy Transparency Toolkit** in 2017, SPOTT now supports transparency for other industries that pose some of the greatest risks to the environment, with SPOTT assessments of timber, pulp and paper companies launched in November 2017.

For more information, visit **SPOTT.org** or contact **SPOTT@ZSL.org.**

About ZSL

Founded in 1826, the **Zoological Society of London** (ZSL) is an international scientific, conservation and educational charity whose mission is to promote and achieve the worldwide conservation of animals and their habitats.

Our mission is realised through our groundbreaking science, our active conservation projects in more than 50 countries and our two Zoos, ZSL London Zoo and ZSL Whipsnade Zoo.

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