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Bilateral cooperation between Zambia Environmental Management Agency (ZEMA) and the Swedish Chemicals Agency (KemI) on pesticide management

Proposal for technical assistance,
June 2020 to December 2023

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1 Executive summary

This is a proposal for a bilateral cooperation between Sweden (the Swedish Chemicals Agency) and Zambia (Zambia Environmental Management Agency) focusing on technical assistance. The cooperation is intended to run from June 2020 to December 2023 and has an estimated total budget of SEK 11,500,000. KemI will provide technical assistance through a long-term expert in Lusaka as well as through support from additional KemI experts, both remotely and in Zambia at specific missions.

The technical assistance from KemI aims to contribute to improved institutional capacity at ZEMA and reduced risks from pesticides to human health and the environment through support for development of a robust registration system for pesticides, based on the recently revised legal framework, and management of highly hazardous pesticides (HHPs). The main focus will be on the establishment of a preventive pesticide management system where the use of the most hazardous pesticides can be restricted or not permitted and where the Globally Harmonised System for classification and labelling of chemicals (GHS) is applied.

Focus areas for the technical assistance have been agreed by ZEMA and KemI to address the current problems related to pesticides. The direct beneficiaries of the project are ZEMA staff who will receive technical support and training related to pesticide management. Other main beneficiaries of this collaboration are people being exposed to highly hazardous pesticides in various ways. Especially small-scale farmers belong to a group that is particularly vulnerable with limited opportunities to protect themselves when handling pesticides. Companies importing and distributing pesticides will benefit from the collaboration by facilitated access to relevant information as well as more effective working procedures at ZEMA. Other ministries and agencies in Zambia will also benefit from trainings and improved capacity and working practices at ZEMA.

Important points of departure for this collaboration are also Sweden's policy for a Global Development, the strategy for Sweden's development cooperation with Zambia 2018-2022, together with the goals for international cooperation, such as the Sustainable Development Goals (SDGs).

The technical assistance has the following main focus areas:

1. Support for establishment of a revised registration process for pesticides in Zambia for registration of efficacious products that will not cause unacceptable harm to human health and the environment and support for increased capacity of ZEMA staff and other relevant institutions
2. Support for improved management of highly hazardous pesticides at ZEMA
3. Support for establishment of an IT support system for registration of pesticides and further development of information on ZEMA's website

2 Background

2.1 The global chemicals challenge

The production of chemicals (including pesticides) around the world is steadily increasing. The number of chemical substances in commercial use is increasing, as are the volumes sold. Between 1950 and 2000, the volume of world production increased from around 7 000 000 tonnes to around 400 000 000 tonnes¹, and there is still an upward trend². Between 2000 and 2010, total world production increased by 54 % according to the American Chemistry Council's Global Chemical Production Regional Index.

The trade with chemicals and articles containing chemicals is steadily increasing across the world. The international chains of production and trade are often long and complex. The global trade with chemicals and articles results in significant spread of chemicals during production, use and disposal as waste. Chemicals are further dispersed across national boundaries with air and water. As issues concerning chemicals become global, the importance of finding global solutions to limit the dispersal of hazardous substances is increasing. In many countries, however, preventive chemicals control is non-existent or weakly developed.

Many chemical substances can have adverse effects on human health and the environment if used incorrectly, which is detrimental to countries' development. According to the World health organization (WHO) in 2016, approximately 1.3 million people die every year due to injuries caused by industrial chemicals, pesticides and occupational exposure (air pollution is not included)³. That is in the same order of magnitude as the number of yearly deaths in 2016 related to road injury, 1.4 million, and HIV/AIDS, 1.0 million⁴. Hence, the benefits for societies and individuals from improved and preventive chemicals control are significant.

Lack of preventive chemicals control risks to counteract successes in other areas. Economic and social growth often leads to an increased use of chemicals in agriculture, industry and households. If there is no legal framework and institutional capacity for chemicals control, then this increase can lead to high economic and social costs due to health and environmental problems. If instead proper legal frameworks and institutional capacity for preventive chemicals control are developed at the same time as the use of chemicals in developing countries is increasing then some of these costs can be prevented. Adequate control of hazardous chemicals is also highly relevant from the perspective of poverty (see chapter 2.3.1).

¹ KemI (2010). Kemisk industri ur ett ekonomiskt perspektiv. Utvecklingstendenser i världen, EU och Sverige. Rapport nr 2/10

² CEFIC (2020). Facts & Figures 2020 of the European chemical industry.
<https://cefic.org/app/uploads/2019/01/The-European-Chemical-Industry-Facts-And-Figures-2020.pdf>

³ WHO (2016). Public health impacts: Knowns and unknowns.
<http://www.who.int/ipcs/publications/chemicals-public-health-impact/en/>

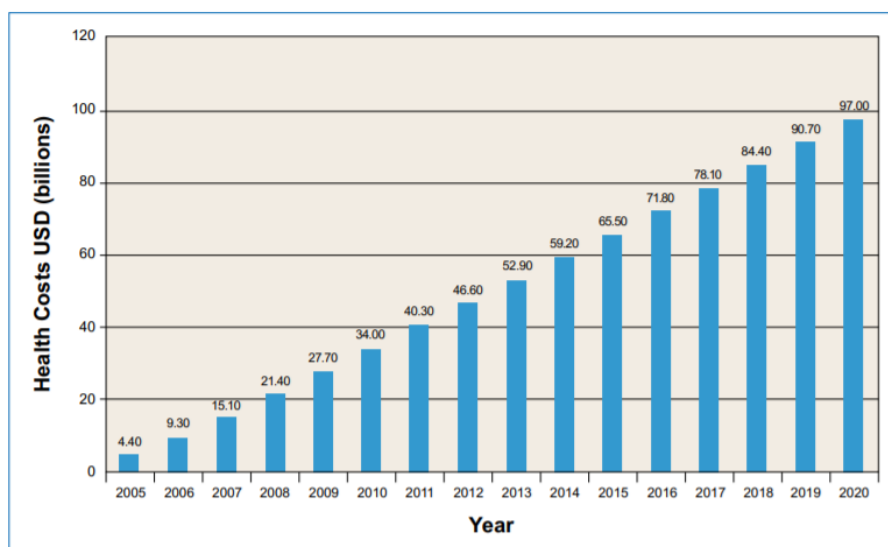
⁴ <http://www.who.int/en/news-room/fact-sheets/detail/the-top-10-causes-of-death> (Latest accessed 13 June, 2018)

2.2 Why do pesticides need special attention?

Pesticides are designed to be toxic to target organisms such as insects, weeds, and fungi and they are deliberately spread in the environment. A significant proportion of pesticides used in the world are considered as highly hazardous, as they may be very toxic to humans by a single exposure or may cause serious chronic effects after low exposure over time. Some pesticides will also accumulate in different organisms and remain in the food chain causing long-term adverse effects in the environment.

Statistics show 25 % of world production of pesticides is used in lower and middle income countries while 95 % of pesticide poisoning cases occur in these countries⁵. Highly hazardous pesticides pose significant risks to human health and the environment due to lack of general awareness about risks with pesticides, limited access to and use of personal protective equipment and use of poor pesticide spraying equipment and techniques resulting in high exposure.

In a report from UNEP⁶ (2013), it is demonstrated that the accumulated costs of injury to smallholder pesticide users in Sub-Saharan Africa is substantial and that the costs are increasing (see below figure)



Source: Calculations made by the authors of this report.

Putting in place measures aimed at reducing the risk of exposure to hazardous pesticides should therefore be considered a priority. In 2015, this was acknowledged also at global level when the International Conference on Chemicals Management (ICCM) recognised Highly Hazardous Pesticides as an issue of concern. All stakeholders are encouraged to undertake concerted efforts to implement the HHP Strategy at the local, national, regional and international levels, with emphasis on promoting agro-ecologically based alternatives and strengthening national regulatory capacity to conduct risk assessment and risk management,

⁵ Global situation of pesticide management in agriculture and public health, FAO and WHO, 2019

⁶ Report on the Costs of Inaction on the Sound Management of Chemicals, UNEP, 2013

including the availability of necessary information, mindful of the responsibility of national and multinational enterprises.

2.3 Chemicals and cross-cutting issues

Agenda 2030 and its sustainable development goals underlines that all the different goals are interlinked and that there is a need to achieve all the goals to reach a sustainable development.

Sweden's development cooperation shall have as points of departure, and shall be characterized by, a rights perspective and poor people's perspective on development. Different so called cross-cutting issues, such as human rights, gender and anti-corruption, are important and should also be included in the development cooperation regarding chemicals management.

2.3.1 Chemicals and poverty reduction

Adequate control of hazardous chemicals is highly relevant from the perspective of poverty. Poor people are affected to a significantly greater degree than others by acute and chronic harm from hazardous chemical substances. This applies both to industrial and consumer chemicals and to pesticides. Poor people live more often than others in polluted areas. Furthermore, at their workplaces they rarely have access to adequate information about hazardous chemicals, they often lack adequate safety equipment and may find it difficult to make demands. In addition, they may be particularly sensitive to hazardous substances if their resistance is already reduced by malnutrition or disease.



Harm caused by chemicals may make it more difficult to move from poverty, due to medical conditions that result in costs for medical treatment and loss of income from work. Land and water resources polluted by hazardous chemicals may become unusable for a long time into the future, which also affects the lives of the poor.

Exposure to hazardous substances may also lead to an impact on future generations, for example through effects on endocrine systems or the central nervous system, which in turn can lead to reduced reproductive capacity or adverse impact on intellectual capacity.

2.3.2 Chemicals and human rights

In 2011, the UN Human Rights Council affirmed that hazardous substances and waste may constitute a serious threat to the full enjoyment of human rights. Hazardous substances and wastes implicate a broad range of civil, cultural, economic, political, and social rights (see text box). Under international human rights law, states have a duty to protect human rights and

businesses have a responsibility to respect human rights, including those implicated by hazardous substances and waste. The rapid acceleration in chemical production suggests the likelihood that this is an increasing threat, particularly for the human rights of the most vulnerable.

Over the recent years, this issue has been recognized and highlighted to a larger extent and in 2014 the Human Rights Council appointed Mr. Baskut Tuncak as UN Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes⁷.

In order for people to protect themselves and the environment from negative effects of chemicals they should be able to exercise a number of human rights. To take necessary precautions, information about the properties of chemicals has to be provided. More than a hundred constitutions in the world guarantee a right to a clean and healthy environment, impose a duty on the state to prevent environmental harm, or mention the protection of the environment or natural resources.

If land or property is damaged or if someone is harmed due to the use of chemicals there must be legal remedies to file a complaint. People have the right to require food and water free from hazardous pesticides.

A joint report has been made by the UN Special Rapporteur on the right to food, Ms Hilal Elver⁸, and the UN Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Mr Baskut Tuncak. In this report it is concluded that exposure to pesticides can have severe impacts on the enjoyment of human rights, in particular the right to adequate food, as well as the right to health. It is also concluded that reliance on hazardous pesticides is a short-term solution that undermines the rights to adequate food and health for present and future generations, and that it is possible to produce healthier, nutrient-rich food, with higher yields in the longer term, without or with minimal use of toxic chemicals and without polluting and exhausting environmental resources⁹. The different examples mentioned above demonstrates that establishing or strengthening pesticide management is contributing to the protection of human rights.

HUMAN RIGHTS IMPLICATED BY TOXIC CHEMICALS

Principles of Non-Discrimination & Equality

Right to Information

Right to Participation

Right to an Effective Remedy

Right to Life

Right to the Highest Attainable Standard of Health

Right to Food

Right to Water

Right to Adequate Housing

Right to a Healthy Environment

Source: <http://www.srtoxics.org/>

⁷ <http://www.srtoxics.org>

⁸ <https://hilalelver.org/>

⁹ <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G17/017/85/PDF/G1701785.pdf?OpenElement>

2.3.3 Chemicals and gender

Exposure to chemicals affects both women and men, but in different ways due to different biological factors, roles, responsibilities and inequalities. Men's exposure to chemicals has traditionally received greater attention, and research has been focused to a greater extent on men and the harm that can occur to them. Despite deficiencies in the research, there is a great deal of evidence to suggest that women are exposed to hazardous chemicals to an extent that may be just as great as in the case of men. Of particular concern is exposure of workers in areas where the use of chemicals is extensive, such as agriculture, production of textiles and electronics etc. While men and women are generally both involved in all those professions, women tend to have a higher level of informal employment and therefore less access to benefits and social protection.

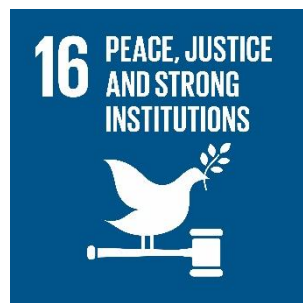


Women and men also exhibit different sensitivity to chemicals due to physiological differences. It is particularly serious that pregnant and lactating women are exposed to hazardous chemicals as they during this time can transfer toxic chemicals to the foetus or child, which can cause irreversible damage to the child's development. Children are in many cases more prone to the effects of chemicals than adults and exposure at an early age may cause lasting damage for example to the nervous system and reproductive capacity.

An area of particular concern is agriculture, where exposure to pesticides may be high, both during spraying but also when handling treated crops, when washing spraying equipment and contaminated clothes etc. Depending on division of responsibilities men's and women's exposure may differ and this needs to be taken into consideration when addressing pesticide risks. Use of household pesticides may affect women and children to larger extent since they tend to spend more time indoors.

2.3.4 Chemicals and anti-corruption

Well-functioning government institutions is a prerequisite for sustainable development. A study¹⁰ commissioned by the Expert Group for Aid Studies (EBA) reveals that factors such as control of corruption, the rule of law, and administrative competence, have a strong positive impact on most standard measures of human well-being (e.g., infant mortality, life expectancy and child poverty) and good quality of government is central for development. If the goal is to improve human well-



¹⁰ Rothstein & Tannenber (2015). Making Development Work: The Quality of Government Approach. <http://eba.se/en/making-development-work-the-quality-of-government-approach-2/#sthash.so7o4DWb.dpbs>

being, the authors argue that more focus should be put on improving the quality of institutions that implement public policies.

The importance of high quality public institutions is also highlighted in SDG target 16.6, “Develop effective, accountable and transparent institutions at all levels”.

The government's policy framework for Swedish development cooperation and humanitarian assistance¹¹ states that support for building democratic forms of government is a central element of development cooperation and that Sweden will support low- and middle-income countries' accession to and implementation of commitments under international environment and climate conventions. Well-functioning environmental management and legislation are central for countries' ability to take long-term responsibility for sustainable development.

2.4 Contribution to the sustainable development goals (SDGs)

In 2015, the UN General Assembly adopted Agenda 2030 with 17 sustainable development goals (SDGs) and 169 targets, which aims at achieving sustainable economic, social and environmental development by the year 2030. The Agenda is universal, and all countries have a responsibility to implement the agenda and to contribute to the achievement of the goals, both nationally and globally.

Several of the SDGs have direct or indirect connections to chemicals. Preventive chemical management is a prerequisite for sustainable development and a means for contributing to the achievement of most of the objectives in Agenda 2030. There are clear associations between sound chemicals management and several of the goals: safe food and agriculture (SDG 2), good health (SDG 3), clean water (SDG 6), safe working environments (SDG 8), sustainable cities (SDG 11), sustainable consumption and production patterns (SDG 12), and protection of ecosystems and biodiversity in water and on land (SDG 14 and 15). Chemicals are mentioned specifically in three targets (3.9, 6.3 and 12.4) belonging to some of these SDGs.

These goals can in turn contribute to reduction of poverty and illness and improve the standard of living for all people. Investment in preventive chemicals control lays the ground for social welfare and contributes to the reduction of poverty. Preventive chemicals control therefore also contributes to the goals relating to reducing poverty (SDG 1), economic growth (SDG 8) and innovation (SDG 9). In SDG target 16.6, the importance of legal frameworks and institutions is highlighted.

It is clear that sound chemicals management can have a direct positive effect on the overall goal of sustainable development and poverty reduction, as well as a better health and access to clean water.

¹¹ Policy framework for Swedish development cooperation and humanitarian assistance, Government communication 2016/17:60.

https://www.government.se/49a184/contentassets/43972c7f81c34d51a82e6a7502860895/skr-60-engelsk-version_web.pdf



Figure 1. Chemicals and waste management related to the Sustainable Development Goals (IOMC, 2018¹²)

2.5 Swedish policies and priorities

The strategy for Sweden’s development cooperation with Zambia 2018-2022 points out the importance of environmentally sustainable increased productivity and production in agriculture, which is a prerequisite for Zambia to be able to achieve higher and more inclusive economic growth. Activities should also contribute to increased productivity and inclusive employment with decent working conditions, particularly for women and young people. Strengthening the institutional capacity by training of staff, the establishment of pesticide registration working procedures that will take risks to human health and the environment into consideration, the development of a pesticide registry of approved pesticides and support in the work on phasing out the most hazardous pesticides will contribute to the objectives of the strategy.

¹² http://www.who.int/iomc/publications/IOMC_CWMandSDG_brochure_final_01Feb18.pdf

3 The intervention context

3.1 Current situation in Zambia related to pesticides

Zambia is considered one of the most unequal countries in the world with a majority of the poor people living in the rural areas. Most people living in these areas are smallholder farmers involved in the agricultural sector. The diversification of the economy, from a copper-based mono- economy to a more favourable diversified economy, has resulted in the agriculture sector receiving priority attention by the Government. In this regard, the country is promoting crop diversification from maize to other crops such as soya beans, wheat, beans, cotton, groundnuts, coffee, oil crops and tubers. In supporting this sector, the Government has also improved access to agro inputs, especially among the smallholder farmers and this has resulted in an increased use of pesticides, which can be seen from the increase in the importation of pesticides; which has continued to increase over the years, from about 70,000 tonnes in 2009 to 218,000 tonnes in 2013 (statistics from ZEMA).

The population at risk include farm workers, spray operators, children and the general community (due to spray drift and pesticide residues in crops). There is limited knowledge among people about the hazards that these pesticides pose to health and to the environment. Difficulties in accessing proper risk mitigation measures, such as personal protective equipment, due to cost and availability lead to extensive exposure of people.

There is considerable amount of literature that try to monetize health effects from pesticides (agro-chemicals). Data from the Kafue basin in Zambia show that pesticides used in one single crop (cotton) resulted in estimated costs of more than 11,000,000 Kwacha in 2010 (see below table)¹³.

Table 3 (continued): Monetized Health Effects : AGRO-CHEMICALS				
Country, City/Region	Chemical/Chemical Category	Health effect	Monetized Data	Source
Zambia, Kafue Basin	Chemicals used on cotton fields	Acute pesticide poisonings	Kwacha 11,286.85 million (USD 2.1 million); lost labor income due to illness (51.1%), medical costs (40.7%); transport and other costs (8.1%)	(Bwalya 2010)

Pesticide risks have also been highlighted in the ongoing Musika Programme, which has been funded by SIDA since 2011. Musika is a Zambian non-profit company with a mandate to stimulate and support private investment in the Zambian agricultural market with a specific focus on the lower end of these markets. Musika's goal is to achieve poverty reduction by making sure agricultural markets work for all stakeholders and in particular the rural poor in Zambia. During its work the Musika programme has reached the conclusion that it is critical that all stakeholders associated with the agricultural supply chain – including statutory bodies such as Zambia Environmental Management Agency – play a role in building the capacity of

¹³ Report of the Cost of Inaction on the Sound Management of Chemicals, UNEP, 2013

supply chain partners and farmers to be aware of and mitigate these risks. In this regard, Musika is currently working with ZEMA on safe use of pesticides among the agro-dealers.

3.2 Status of Pesticide Management in Zambia

In Zambia, the Zambia Environmental Management Agency (“ZEMA”) is mandated under Section 9 of the Environmental Management Act No. 12 of 2011 (“EMA”) to among others; do all such things as are necessary to ensure the sustainable management of natural resources and protection of the environment and the prevention and control of pollution. More specifically, ZEMA is mandated under Sections 65 and 66 of the EMA as read together with Part 5 of the Environmental Management (Licensing) Regulations, Statutory Instrument No. 112 of 2013 (“S.I 112 of 2013”) to regulate the sound management of pesticides.

Zambia is also a party to a number of conventions such as the Stockholm convention on Persistent Organic Pollutants, the Rotterdam convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, the Basel convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

3.2.1 Licencing of Pesticides

Regulation 31(1) of SI 112 of 2013 provides that; “a person who intends to manufacture, import, export, store, distribute, transport, blend, process, re-process or change the composition of a pesticide or toxic substance or re-process an existing pesticide or toxic substance for a new use shall apply to the Agency for a pesticide and toxic substance licence in Form VIII and X set out in the First Schedule”.

The application for a pesticide import licence contains the following dossier requirements:

- i. Details of the applicant;
- ii. Product identification details (trade name, active ingredient(s) etc.);
- iii. Efficacy data;
- iv. Maximum residue limit (MRL);
- v. Data on acute toxicology;
- vi. Ecotoxicology;
- vii. Packaging details;
- viii. Certificate of registration from the country of origin or from a SADC country; and
- ix. Safety data sheet in line with the Globally Harmonized System for classification and labelling of pesticideschemicals (GHS).

Further, Regulation 35 of the Licensing Regulations provides that a person shall not deal in pesticides unless the labels of the pesticides have been approved by ZEMA. In order to approve a label of a pesticide, ZEMA requires the following information:

- i. Details of the applicant;
- ii. Product identification details (trade name, active ingredient(s) etc.);
- iii. Intended use and use directions;

- iv. Colour codes according to WHO; and
- v. Pictograms and hazard statements according to GHS.

Where the label requirements above are met, ZEMA approves the label by endorsing its approval on the label as well as keeping and maintaining a sample of the approved label.

However, even though the current legal framework to a large extent regulates pesticides, the EMA and S.I 112 of 2013 does not provide for registration of pesticides before a licence is issued.

According to the FAO Guideline on Pesticide Registration, registration is defined as follows:

“the process whereby the responsible national government or regional authority approves the sale and use of a pesticide following the evaluation of comprehensive scientific data demonstrating that the product is effective for its intended purposes and does not pose an unacceptable risk to human or animal health or the environment”.

Zambia’s current licencing system does not include such a comprehensive evaluation and may therefore not identify products with unacceptable risks to human or animal health or the environment. Due to this gap in the legislation, there is a possibility that hazardous pesticides enter the Zambian market and cause risks to users, consumers and the environment. The Ministry of Justice has recently requested ZEMA to do a legal review and this process will be initiated shortly.

3.2.2 Bans and Restrictions

Taking into account the provision of Regulation 40 of SI 112 of 2013, it is possible to ban, severely restrict or restrict the use or production of a pesticide if the unregulated use or production is or is likely to be harmful to human health, animal or plant life or the environment. However, the legislation does not contain criteria for implementation of the provisions under regulation 40 and it has therefore not been used to ban or restrict pesticides in Zambia. Zambia is party to the Stockholm, Rotterdam, Basel and Minamata conventions. The conventions have, however, not been domesticized in Zambia because of this legal gap.

3.2.3 Working Procedures and Support Systems

The handling of applications for pesticide import licences currently involves a lot of manual work and there is no common electronic system to keep track of documents related to the applications and to ZEMA’s decision process. This makes the licencing system ineffective and covert.

3.3 Desired Future System

3.3.1 Registration and Licencing of Pesticides

To be able to identify pesticides with unacceptable risks to human health and the environment before they reach the *Zambian* market, ZEMA wishes to introduce a robust registration scheme (pre-market approval system) in line with the recommendations from FAO's guideline on pesticide registration. In such a registration scheme, the applicant for approval of a pesticide would need to submit more extensive data on the pesticide properties (both for the active substance and the formulated product), such as acute and long-term toxicity to human health and the environment, degradation in the environment, residues in crops and use patterns. On the basis of this information ZEMA will be able to get a better picture of the pesticide properties and assess the risks to human health and the environment. This assessment will then serve as a basis for decision on approval (registration)/non-approval of the pesticide. The process of reviewing the current legislation is on-going and the outcome will be used in the continued work.

Once a pesticide is registered according to this new scheme, the current licencing system can be used as a complementary system to keep track of importers of pesticides into *Zambia*.

3.3.2 Improved System of Imposing Bans and Restrictions

To be able to prohibit/ban/restrict the use of hazardous pesticides in *Zambia*, there is a need to develop criteria related to unacceptable hazards and risk and include these in the legislation. In 2019, a legal review was conducted with support from the Rotterdam Convention Secretariat and a number of recommendations were made, among others to promulgate a regulation for prohibition/banning/restricting certain pesticides used in *Zambia*. By doing so, *Zambia* would domesticate the provisions of the global chemicals conventions and protocols (Stockholm, Rotterdam, Montreal and Minamata). To be able to prohibit/ban/restrict the use of hazardous pesticides not covered by these conventions, additional criteria related to unacceptable hazards and risk would also need to be included.

3.3.3 Enhanced Working Procedures and Support Systems

Putting in place a pesticide database where information related to applications and ZEMA's internal decision process is saved and accessible to everyone involved in the process will facilitate the work and remove manual handling of documents.

A register of approved pesticides, which is available to all stakeholders, will facilitate compliance of the regulation as well as the enforcement activities.

4 The proposed intervention

4.1 Background

Focus areas for the technical assistance have been agreed by ZEMA and KemI to address the current problems related to pesticides in Zambia.

Informal discussions on collaboration between ZEMA and KemI started already in 2013. Discussions continued during several years and in December 2018, Sida and KemI signed an agreement for a 6 months inception phase to allow consultation with relevant stakeholders in Zambia and to develop a proposal for a collaboration on pesticide management. March 13-15, 2019, KemI and ZEMA jointly organized a consultative workshop in Lusaka with the objectives to bring together experts from government and learning and research institutions in the country in order to deliberate why a change of the current situation is needed and to gain consensus on what shall be done. The workshop agreed that the goal of the collaboration should read as follows:

“To strengthen institutions and legal framework for sound management of pesticides in Zambia to safeguard human health and the environment”

The workshop also outlined the following next steps:

- i. Review the inputs from the workshop
- ii. Revise the cooperation agreement and proposal (prioritise activities, develop work plan and budget)
- iii. KemI and ZEMA to sign an MoU for the cooperation
- iv. KemI and ZEMA to submit the proposal to Sida for funding; and
- v. Organise a kick-off meeting for the collaboration.

KemI and ZEMA then continued the development of the proposal based on the outcomes from the workshop and in close dialogue with Sida. During the development of the proposal, certain circumstances changed which delayed the process. It became possible for KemI to provide a long-term expert (to be located in Lusaka) enabling day-to-day technical assistance and close collaboration with ZEMA staff.

In order to further discuss outstanding questions related to the proposal and to agree on terms for the bilateral collaboration, KemI undertook an additional mission to Lusaka in February 2020. During this mission, ZEMA and KemI agreed on the content and the provisions of the technical assistance. The proposal was revised accordingly and the main focus for the technical assistance and provisions for the collaboration was endorsed by the Director General of ZEMA at meeting held 10 February 2020.




Important points of departure for this collaboration are also Sweden’s policy for a Global Development, the strategy for Sweden’s development cooperation with Zambia 2018-2022, together with the goals for international cooperation, such as the Sustainable Development Goals (SDGs).

The cooperation is intended to run from June 2020 to December 2023. The period June to August 2020 will mainly be used to arrange practical issues connected to the KemI long-term expert in Lusaka. Technical assistance to ZEMA will be provided from August 2020 to July

2023 and the period August to December 2023 will be devoted to closing of the cooperation, communication of result etc.

4.2 Theory of change, assumptions and mitigation measures

Chain of results	Underlying assumptions	Mitigation measures
<p>If ZEMA develops a pesticide registration system including requirements for a hazard and risk assessment that is supported by technical guidelines and Standard Operation Procedures etc.</p> <p style="text-align: center;"><i>and</i></p> <p>If ZEMA proposes amended legislation to introduce provisions for registration of pesticides</p> <p style="text-align: center;"><i>and</i></p> <p>If highly hazardous pesticides in use in Zambia are identified and listed</p> <p style="text-align: center;"><i>and</i></p> <p>If the phasing out or restriction of prioritized HHPs has started</p> <p style="text-align: center;"><i>and</i></p> <p>If an IT system for registration of pesticides has been developed</p> <p style="text-align: center;"><i>and</i></p> <p>If ZEMA staff have acquired relevant skills and knowledge, e.g. by being trained in methods for risk assessment, risk management and GHS and by taking part in the development of guidance documents etc. then...</p>	<p>The management of ZEMA makes sure that staff from ZEMA have the time, mandate and relevant positions in their organisations to develop Technical guidelines, Standard Operation Procedures (SOP) etc. and contribute to an amended legislation to support an improved registration scheme.</p> <p>Work within a FAO supported project on highly hazardous pesticides is making progress to serve as a basis for the development of proposals to phase out the most highly hazardous products.</p> <p>Identification of alternative products and/or methods to HHPs is making progress and the alternatives are available and accepted among extension officers and farmers.</p> <p>IT hardware and a digital platform is available at ZEMA to enable inclusion of a pesticide registration module</p> <p>Relevant ZEMA staff have the possibility and capacity to take part in trainings on risk assessment and risk management of pesticides and in trainings on how to work according to new procedures when handling applications and managing HHPs</p>	<p>Development of in-depth relationship/dialogue with ZEMA's management around:</p> <ul style="list-style-type: none"> • participation of staff at ZEMA in the revision of the current registration scheme for pesticides in Zambia and in different trainings • consequences and requirements of an improved registration scheme which will place a large responsibility on companies in terms of increased data requirements and application of new guidance, • commitment and input from other relevant institutions regarding participation in the project <p>Assignment of a long-term adviser from KemI to be located in Lusaka that can provide technical assistance and advice on a day-to-day basis</p> <p>If the mid-term review that Sida plans to carry out 2022 shows lack of progress, KemI and ZEMA can mutually agree on ending the collaboration in advance.</p>

Chain of results	Underlying assumptions	Mitigation measures
<p style="text-align: center;"></p> <p>...ZEMA staff are likely to use the improved practices: they will use new relevant methods and tools pertaining to risk assessment and risk management of pesticides, supported by new information, procedures, guidelines, amended legislation and IT support system then....</p>	<p>The management of ZEMA are committed to:</p> <ul style="list-style-type: none"> • ensuring that a large enough group of staff maintain the knowledge and skills pertaining to the training included in the technical assistance • continuing the implementation of the new working practices • continuing the management of HHPs • safeguarding that the work on amended legislation to support an improved registration scheme is making progress • maintaining the IT support system for the registration of pesticides 	<p><i>Partly beyond the sphere of control of the collaboration</i></p> <p>Development of in-depth relationship/dialogue with ZEMA's management around the value and importance of:</p> <ul style="list-style-type: none"> • maintaining and continuing implementation of new working procedures for registration of pesticides and management of HHPs • maintaining necessary skills of ZEMA staff
<p style="text-align: center;"></p> <p>... ZEMA staff involved in the management of pesticides are likely to become more effective to manage risks to human health and the environment then...</p>	<p>There is a political willingness to engage in reforms aiming at more systematic and effective control of pesticides that will safeguard human health and environment.</p>	<p><i>Beyond the sphere of control of the collaboration</i></p>
<p style="text-align: center;"></p> <p>... ZEMA will contribute to sound management of pesticides in Zambia to safeguard human health and the environment</p>	<p>There is willingness among different stakeholders to collaborate for a more systematic and effective control of pesticides that will safeguard human health and environment.</p> <p>There is support from concerned industry for a more systematic and effective control of pesticides that will safeguard human health and environment.</p>	

4.3 Objectives and beneficiaries

The overall objective of the proposed collaboration is to contribute to increased institutional capacity and better practices for the management of pesticides to safeguard human health and the environment. To contribute to the overall objective, the following short-term objectives are proposed:

1. A revised registration process for pesticides in Zambia to support registration of efficacious products that will not cause unacceptable harm to human health and the environment is established and the capacity of ZEMA staff and other relevant institutions has increased;
2. ZEMA's management of highly hazardous pesticides has improved; and
3. An IT system for registration of pesticides is established and the information on ZEMA's website is further developed.

The direct beneficiaries of the technical assistance are ZEMA staff who will receive advice and training related to pesticide management. Other main beneficiaries of this collaboration are people who are being exposed to highly hazardous pesticides in various ways. Especially small-scale farmers belong to a group that is particularly vulnerable with limited opportunities to protect themselves when handling pesticides. Companies importing and distributing pesticides will benefit from the collaboration by facilitated access to relevant information as well as more effective working procedures at ZEMA. Other ministries and agencies in Zambia will also benefit from trainings and improved capacity and working practices at ZEMA.

4.4 Cross-cutting issues

4.4.1 Gender aspects

The collaboration will deal with the gender perspective in two dimensions.

Pesticide management: When developing legislation, equal protection of everyone in the society (men, women, children, vulnerable groups) needs to be assured. Methods for hazard and risk assessment of pesticides must take the gender differences and exposure patterns into consideration in order to ensure equal protection of all groups.

Participation: The partners will strive to engage representatives of both genders on an equal basis and in equal numbers in activities such as trainings, experience exchange activities, study trips and workshops.

4.4.2 Anti-corruption

The development of institutional capacity at ZEMA, e.g. by building a robust registration scheme for pesticides with clear data requirements and decision criteria, harmonised procedures for handling of applications etc. will increase transparency and assure equal treatment of applicants.

Funds for the technical assistance will mainly be handled by KemI in order to reduce costs for administration and additional audits.

4.4.3 The poverty perspective

The development of a robust registration scheme for pesticides with assessment of risk to human health and environment before they are imported and used in Zambia will contribute to improved protection of farming communities. Especially small-scale farmers belong to a group that is particularly vulnerable with limited opportunities to protect themselves when handling pesticides. Improved management of HHPs will also contribute to reduced risks for farmers by removing the most hazardous pesticides and replacing them with less hazardous products or non-chemical alternatives.

4.5 Cooperation arrangements

4.5.1 Principles of the cooperation

The ZEMA-KemI cooperation is a cooperation between two government agencies with responsibilities for management of pesticides and other chemicals. The cooperation should not be seen as an external contribution or extra work to be added to the regular activities and ambitions set by ZEMA. On the contrary, the cooperation is intended to support the daily work of ZEMA and strengthen the capacities of the agency and its management of pesticides.

ZEMA and KemI undertakes to implement the cooperation in accordance with the description in this document and are jointly responsible for progress of the cooperation, including execution of agreed work plans, monitoring of activities, and updating of risk management plans.

4.5.2 Roles and responsibilities

KemI will provide technical assistance through a long-term expert in Lusaka during 2-3 years (with planned start in August 2020) as well as through participation of additional experts from Sweden, both remotely and by performing short-term missions to Zambia (continuously throughout the cooperation). KemI undertakes to make sure that the right expertise is provided to the cooperation for all activities.

ZEMA will make sure that relevant experts are available to work together with the KemI experts and ensure that different proposals and deliverables are discussed and endorsed by ZEMA's senior managers. ZEMA will make available office premises and provide access to ZEMA's infrastructure for the KemI long-term expert.

The roles and responsibilities of parties within this cooperation are proposed as below:

Role	Name of responsible person* (if identified)	Responsibilities	Estimated working hours/week
ZEMA			
Contact persons	Mr Christopher Kanema	<ul style="list-style-type: none">• Contacts with KemI	2

Role	Name of responsible person* (if identified)	Responsibilities	Estimated working hours/week
		<ul style="list-style-type: none"> • Provide input to annual work-plans and progress reports • Coordinate input/participation from ZEMA experts and other experts from Zambia • Internal consultations with senior management 	
Technical expert on pesticide registration and management of HHPs	Mr Silvester Nguni Mr Bruce Simfukwe	<ul style="list-style-type: none"> • Provide technical input 	20
Technical expert on legal issues	Mwase Kumwenda	<ul style="list-style-type: none"> • Provide input in the development of legislation 	
Technical expert on inspection issues	Mr Josphat Sichula	<ul style="list-style-type: none"> • Provide technical input 	
Administrative support - accountant - communication - procurement		<ul style="list-style-type: none"> • Provide support related to organisation of meetings/workshops etc. • Provide support related to communication activities • Provide support related to procurement of meeting venues etc. 	0.5
Total number of working hours per week (ZEMA)			22.5
KemI			
Contact persons	Ms Jenny Rönngren Ms Helena Casabona	<ul style="list-style-type: none"> • Contacts with Sida • Develop annual work-plans in collaboration with ZEMA • Continuous monitoring of progress and budget follow-up • Develop annual reports based on input from ZEMA • Coordinate with experts from KemI and other Swedish experts 	2
Long-term expert in Lusaka (technical expert on pesticide registration procedures, management of HHPs, environmental risk assessment etc.)	Ms Jenny Rönngren	<ul style="list-style-type: none"> • Provide technical advice related to registration of pesticides and management of HHPs • Develop guidelines, SOPs etc. in collaboration with ZEMA experts 	28

Role	Name of responsible person* (if identified)	Responsibilities	Estimated working hours/week
		<ul style="list-style-type: none"> Technical advice and training on environmental risk assessment 	
Technical expert on pesticide registration, management of HHPs , human health risk assessment etc.	Ms Helena Casabona	<ul style="list-style-type: none"> Provide technical advice related to registration of pesticides and management of HHPs Develop guidelines, SOPs etc. in collaboration with ZEMA experts Technical advice and training on human health risk assessment 	12
Technical expert on legal issues	TBC	<ul style="list-style-type: none"> Technical advice 	2
Technical expert on enforcement	TBC	<ul style="list-style-type: none"> Technical advice and training 	
Technical expert on databases	TBC	<ul style="list-style-type: none"> Technical advice 	
Administrative support - accountant - communication	Mr Per-Ola Bengtsson (controller) Communication-TBC	<ul style="list-style-type: none"> Provide support related to financial follow-up and procurement Provide support related to communication activities 	0.5
Total number of working hours per week (KemI)			44.5

*or the replacement for that person

A collaboration committee with 1-2 representatives from KemI (including the long-term expert) and 1-2 representatives from ZEMA (including 1 senior manager) will be established. If relevant, 1-2 representatives from Sida will be invited. The committee will meet 2-4 times per year, depending on the needs, to discuss planning and needs for adjustments and report on progress. ZEMA will also give an update on progress within other related projects to ensure alignment and avoidance of duplication of activities.

At an early stage of the cooperation, it is important to involve and analyse available resources at other key institutions in Zambia (ministries, academia etc.) in order to increase general knowledge and capacity and to facilitate endorsement of the revised system for management of pesticides.

4.5.3 Working methods

ZEMA experts and the KemI long-term expert will work in close collaboration when developing the new registration process, the IT support system, management of HHPs etc. The long-term expert is envisaged to have an office space at ZEMA to be able to provide technical assistance on a day-to-day basis and to get better knowledge about ZEMA's working

procedures, resources, challenges etc. KemI will make sure that the team of experts have access to a small meeting room with technical equipment to facilitate joint development/drafting of guidance documents, checklists etc. This way of working will ensure ZEMA ownership and adaption to local needs and conditions and will contribute to continuous capacity building of ZEMA staff. Capacity building will also be provided through specific training, study visits etc.

Regular consultations with ZEMA's senior management are envisaged in order to make sure that proposals and deliverables are in line with the agency's priorities and development in related areas.

The KemI long-term expert will have support from other KemI experts and will use digital meetings for discussions and exchange of information. Digital meetings will also be used for input from KemI experts during the day-to-day work with ZEMA. Activities in Zambia involving experts from Sweden will be organised to allow several workshops, trainings etc. to be held during the same mission, rather than being divided between several missions. This will also reduce the need for travelling between Sweden and Zambia and thereby minimize negative environmental impact caused by flying.

4.5.4 Coordination and consultation

When necessary, experts from other Swedish Authorities and relevant experts can be contracted to assist in the cooperation. Activities involving experts from other Swedish authorities, e.g. the National Food Agency, will be coordinated by KemI. Similarly, ZEMA will coordinate the involvement of other key stakeholders and experts from Zambia.

4.5.5 Communication and dissemination of results

At the beginning of the cooperation, KemI and ZEMA will organise a kick-off meeting to present objectives for the cooperation and the focus of the technical assistance to a larger group of stakeholders. The aim is to inform about the planned work and how the revised procedures for management of pesticides might affect them. The team will present how other stakeholders will be involved and how information will be disseminated and how stakeholders can communicate and provide input to the team. ZEMA and KemI will make a target group analysis for communication activities and develop a communication strategy. This strategy will then guide the communication activities within the cooperation. ZEMA's systems and resources for communication in their regular work will be used as far as possible and KemI will provide support, if necessary. Communication materials may include dissemination activities, documents for the media, brochures, flyers, banners, short videos etc.

Results from the cooperation will be made publicly available through ZEMA's, KemI's and Sida's websites.

4.6 Planning, monitoring, reporting and evaluation

4.6.1 Planning

A detailed annual work-plan, including budget, will be developed for each year of the cooperation. A detailed plan for June 2020- June 2021 can be found in Annex 2.

4.6.2 Monitoring, evaluation and reporting

Progress from the cooperation and the technical assistance will be monitored by KemI and ZEMA against set targets and indicators in the annual work-plan. In case there is a need for adjustments of the budget and/or project activities outside the agreed work-plan, ZEMA and KemI will consult with Sida and agree on a way forward.

KemI will be responsible for annual reporting (narrative and financial) to Sida. ZEMA's internal reporting routines includes quarterly reports which will serve as a basis for these annual reports.

The following aspects will be included in the annual report:

- **Results** – the results will be reported against set objectives with a narrative description on achieved results and whether the work is on track or not
- **Financial reporting and auditing** – financial expenditure in relation to the agreed budget
- **Risks** – any possible updates of the risk analysis and mitigation measures will be included

The format of the report and the routines for when and how to submit the annual reports will be laid down in the agreement between KemI and Sida and in the agreement between KemI and ZEMA.

4.6.3 External evaluation

An external evaluation of the cooperation and the technical assistance will be made in accordance with the agreement with Sida. Sida will commission a mid-term evaluation, early in the third year of implementation.

4.7 Risk management

The following risks have been identified and may, in the likelihood of occurrence, jeopardize the achievement and sustainability of the expected results:

No	Risk	Probability	Effect on the project	Risk management
1.	Insufficient access to staff and other resources	Medium	High	Continuous discussion with the management at ZEMA to secure that relevant expert are available for collaboration with KemI. The contract between the parties will contain clauses regulating deviations from the agreement.
2.	Change in priority of issues related to pesticide management at ZEMA	Low	High	The contract between the parties will contain clauses regulating deviations from the agreement.
3.	Insufficient support for endorsement of the revised legislation	Medium	High	Advocacy and consultation with other concerned stakeholders to create understanding of the benefits and necessity of making amendments of the legislation
4.	Greater political changes (policy change)	Medium	Medium	The contract between the parties will contain clauses regulating deviations from the agreement.
5.	Procurements (including sub-contracting of consultants) within the project can include a possibility for corruption.	Medium	Low/medium	All procurements will be done by KemI, with support from ZEMA. Transparency will be promoted in all situations. Upon suspicion of corruption or other irregularities, KemI will inform Sida. It is also possible to inform Sida anonymously via their webpage: https://www.sida.se/English/Contact-us/Whistleblower/ Cash payments will be avoided as far as possible. Disbursement of cash will only be made against receipts.
6.	Natural disasters and pandemics	High	Medium	Due to the Covid-19 outbreak some activities may have to be postponed and the presence of the KemI long-term expert might be delayed. To minimize effects of these kind of incidents, work-plans will allow for some flexibility in terms of timing of activities over the years.

4.8 Sustainability

ZEMA will continue to implement activities beyond the cooperation period through its existing mandates. Introduction of a registration scheme for pesticides will, however, require additional resources at ZEMA since this task is not included in the agency's current work. It is therefore important to mobilize support for increased resources to the part of ZEMA expected to handle such applications for registration.

4.9 Environmental impact assessment

The intervention as such aims at the protection of the environment by promoting preventive chemicals management and will contribute to a number of the sustainable development goals related to environmental protection, mainly:

- 3.9 to substantially reduce the number of deaths and illnesses from hazardous chemicals, and air, water and soil pollution and contamination
- 6.3 to improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals,
- 12.4 to achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
- 15.5 to take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and by 2020, protect and prevent the extinction of threatened species

The revised registration scheme to be developed within the cooperation will include data requirements for the applicant to demonstrate that the pesticide product can be used without causing any unacceptable risks to the environment.

The objective is to build institutional capacity so that institutions involved in the management of pesticides will be able to phase out or restrict the use of pesticides causing unacceptable risks to human health and the environment and to prevent that new HHPs enter the Zambian market.

Long-distance travelling will be the cooperation's most important direct impact on the environment. KemI will therefore provide for a long-term expert to be located in Lusaka. Activities and meetings requiring presence of additional KemI experts will be organised in such way that the need for travelling is minimized. Video conferences, Skype and other means of communication and training tools will be used to support every day work and to prepare and follow up physical workshops and meetings to make them as productive and meaningful as possible.

KemI is certified according to the international environmental management standard ISO 14001. Internal environmental objectives are developed and monitored annually. A recent sustainability assessment (2018) showed that the agency's largest environmental impact is related to travelling by air. KemI's internal environmental objectives for 2020 relates to sustainability requirements in procurements and promotion of digital meetings to replace travels.

4.10 Alignment and harmonization with other projects and activities

In addition to the proposed cooperation and technical assistance from KemI, ZEMA is involved in the following related projects:

Project and collaboration partner	Time-frame	Scope and objectives	Connection to the bilateral cooperation ZEMA-KemI
Highly Hazardous Pesticides (HHP), FAO subregional office for Southern Africa	2018-2020	Identification of HHPs licensed in Zambia, survey of HHPs in use in 3 districts	The project results will be used to continue the work on improved management of HHPs, including amendment of legislation, risk assessment etc.
ITP 320 – Developing strategies for national chemicals management, KemI	2018-2022	Capacity development in chemicals management for government officials	ZEMA staff can use this training opportunity to strengthen its internal capacity. It is expected that the change projects will be developed in such a way that they will be linked to and support the objectives of the bilateral cooperation.
Development of the Continuous Environmental Monitoring System (CEMS), International Development Association (WB)	2019-2023	Develop an e-system supporting ZEMA's licensing system etc.	The pesticide registration module will be connected to this database to make sure that data does not have to be entered several times and that the information is accessible to everyone using the database.
Zambia's Action plan for developing a Poison Centre		To establish a Poison Centre in Zambia	The team will make sure that information needs related to pesticides is taken into account when developing the registration process, IT system etc.
MUSIKA	2018-2021	To provide world class business development service to Zambia's agricultural market in order to deepen and broaden the impact of economic growth to all levels of rural society	Results and conclusions from the ongoing work within MUSIKA will be taken into account. The team will keep in contact with MUSIKA to make sure that activities are aligned and that there is exchange of information and possibilities to provide input
Integrated Health and Environment Observatories and Legal and Institutional Strengthening for the Sound Management of Chemicals in Africa, UNEP		To develop an integrated set of tools that can help to build the capacity necessary to set up an integrated surveillance and information management system of chemical of public health concerns.	The cooperation will make sure that the new IT system to be developed supports this work

ZEMA is responsible for coordination and harmonization with other donors and stakeholders. National planning and monitoring systems will be used as far as possible.

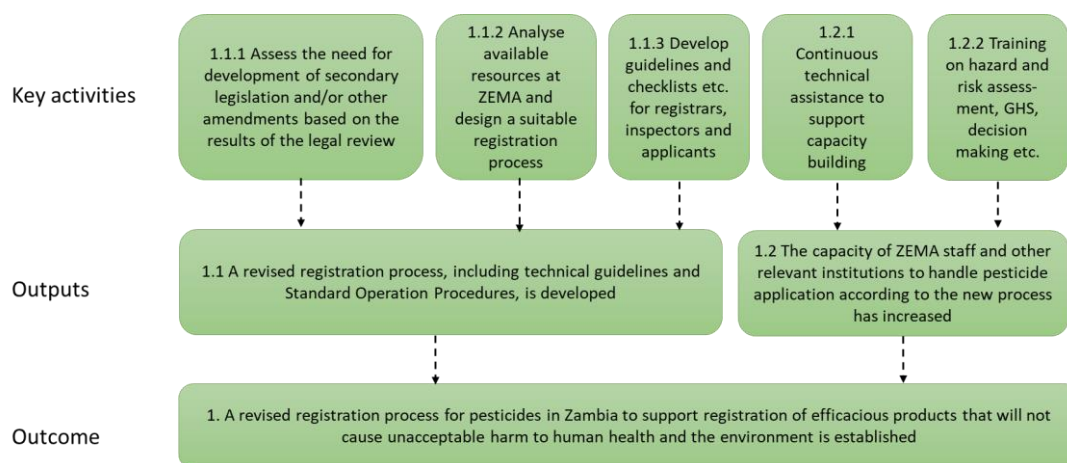
5 Objectives, expected results and activities

5.1 Overall objective

The overall objective of proposed intervention is to contribute to increased institutional capacity and better practices for the management of pesticides to safeguard human health and the environment. To contribute to the overall objective, three short-term objectives are proposed (see detailed description below). A results framework with activities, indicators, means of verification etc. can be found in Annex 1.

5.1.1 Short-term objective 1 - A revised registration process for pesticides in Zambia to support registration of efficacious products that will not cause unacceptable harm to human health and the environment is established and the capacity of ZEMA staff and other relevant institutions has increased

Expected outputs and key activities are described below.



Justification for the proposed activities

The current legal framework does not provide for registration of pesticides before a licence is issued. The licencing system in place does not include a comprehensive evaluation of scientific data and may therefore not identify products with unacceptable risks to human or animal health or the environment. Due to this gap in the legislation, there is a possibility that hazardous pesticides enter the Zambian market and cause risks to users, consumers and the environment.

To be able to register pesticides before they reach the Zambian market there is a need to amend the legislation and introduce a registration requirement, including comprehensive data requirements. This process is on-going and the results of the legal review will be used for the

continued work. The need for development of secondary legislation and/or other amendments will be assessed when the legal review is finalized.

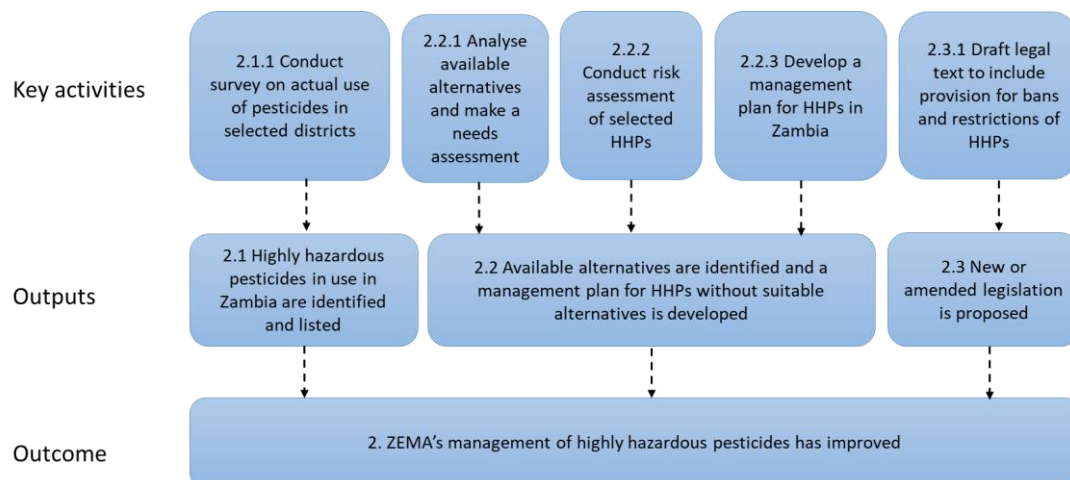
Based on available resources at ZEMA, a suitable registration process in line with the recommendations from FAO’s guideline on pesticide registration and SADC’s guidelines on pesticide management and risk reduction will be developed. The application dossier needs to include data on hazard and a description of how the product is going to be used and how people and the environment may be exposed. This information then needs to be checked by the registration authority to be able to identify need for additional information. When the application is considered complete the registration authority should assess the risk to human health and the environment and decide whether the product can be approved for use in Zambia with or without specific restrictions. To be able to take such decisions specific cut off criteria need to be developed and applied.

To facilitate the implementation of the new pesticide registration scheme, guidelines, checklists, templates etc. will be developed to support ZEMA staff and industry.

Assessment of more comprehensive data packages will require in-depth knowledge on hazard and risk assessment, labelling (GHS), decision making etc. and this will be addressed by providing continuous technical assistance and specific trainings for ZEMA staff and other relevant institutions (including members of the chemical review committee of the board). The training will build on the approach of training of trainers (ToT) where the core administration, local authorities and research institutions will be the priority of the cooperation. This will include development of relevant training materials on risk assessment, GHS etc. The training should clearly focus on subjects of relevance for managing pesticides according to the revised registration scheme and for phasing out the highly hazardous pesticides.

5.1.2 Short-term objective 2 – ZEMA has improved its management of highly hazardous pesticides

Expected outputs and key activities are described below.



Justification for the proposed activities

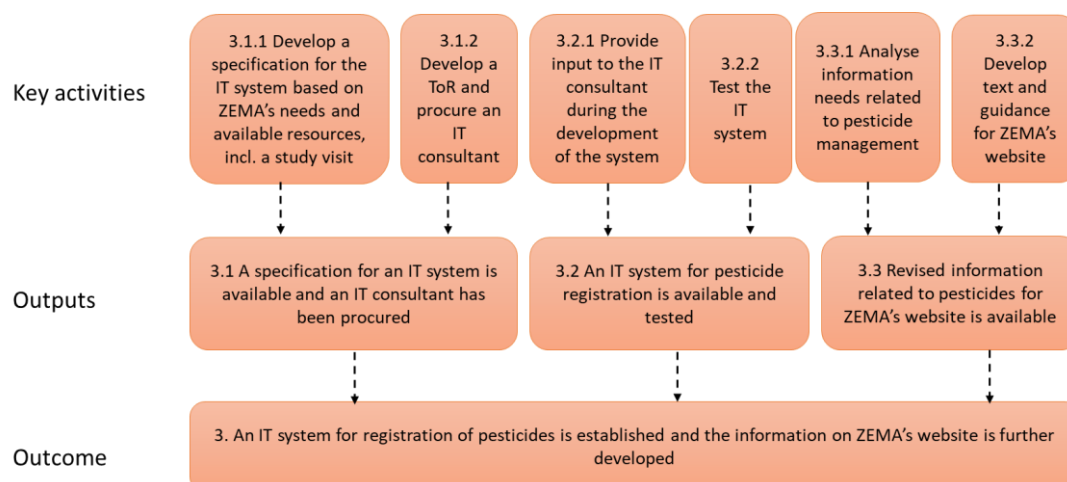
To be able to phase out or restrict HHPs, it is important to get information on which of the imported (licensed) pesticides that fulfill the HHP criteria and information on which pesticides are being used by farmers. Information on use of pesticides will be gathered by conducting surveys in selected districts. The on-going FAO project will deliver a list of licensed HHPs in Zambia.

The next step will be to analyse available alternatives (such as less hazardous pesticides, non-chemical means or other prevention methods) and make a needs assessment, i.e. to assess how urgent the need for a specific pesticide is. For HHPs without suitable alternatives, a risk assessment will be performed to estimate the risk from the suggested use and identify possible risk mitigation measures, such as use of personal protective equipment etc. Based on this information, a management plan for HHPs in Zambia will be developed. This work will be done in consultation with concerned stakeholders to make sure that proposed measures are understood and accepted, without compromising safety to public health or to the agricultural sector. To be able to ban or restrict HHPs there is a need for legal provisions to do so. Necessary amendments of the current legislation will therefore be proposed.

To be able to phase out and replace HHPs, building capacity in identification and management of such pesticides is necessary. The proposed training related to short-term objective 1 will also support the achievement of this objective.

5.1.3 Short-term objective 3 - An IT system for registration of pesticides is established and the information on ZEMA's website has been further developed

Expected outputs and key activities are described below.



Justification for the proposed activities

An IT system that can support the registration of pesticides in Zambia will facilitate for the applicant as well as for ZEMA staff handling the applications. To be able to build a suitable system, a specification for the IT system need to be developed. A study visit to a suitable country with a well-functioning IT system in place will provide important information and input to the specification.

It will be necessary to hire a consultant to build the IT system. ZEMA and KemI will develop a Terms of Reference for the procurement of a consultant. Since ZEMA has contracted a consultant to develop an electronic environmental monitoring system (including support for application for various licenses) alignment with this project is necessary and the possibility to engage or consult with this consultant will be explored. During the development of the IT system ZEMA and KemI will provide input and take part in the testing.

To provide support and guidance to applicants and other stakeholders, further development of ZEMA's website is crucial. If external parties have access to more information, it will simplify their work and minimize the need to ask ZEMA for advice. It will facilitate for stakeholders to take their responsibility and to comply with the legislation. If a list of registered pesticides is made publicly available, agro-dealers, farmers, inspectors and others will know which pesticides are allowed to be used in Zambia and for which purposes.

5.2 Detailed work-plan 2020-2021

A detailed work-plan including activities during the first year of the cooperation, June 2020-June 2021, is included in Annex 2. The work-plan should be regarded as a living document, which will be updated every year.

6 Budget

The budget will be used to cover KemI staff costs (long-term and short-term experts), travel costs, costs related to the KemI long-term expert in Lusaka, costs for arranging meetings in Lusaka, workshops and study visits (including travel, accommodation and meals) as well as for costs connected to sub-contracted experts and purchase of necessary equipment. The technical assistance is budgeted to deliver a consistent level of support over the whole cooperation period. The activity period is intended to run from June 2020 to December 2023.

An overall budget can be found in the below table. Details and assumptions behind the budget figures can be found in a separate document.

Budget - Overview	Period: June-Dec 2020	Period: Jan-Dec 2021	Period: Jan-Dec 2022	Period: Jan-Dec 2023	Total overview
Item					Total Budget
Fees/salaries					
1. Long-term expert	378 000	756 000	756 000	473 000	2 363 000
2. Short-term experts	260 000	464 000	464 000	309 000	1 497 000
Fees/salaries total	638 000	1 220 000	1 220 000	782 000	3 860 000
Reimbursable					
3. Reimbursable long-term expert	1 050 000	1 350 000	1 350 000	900 000	4 650 000
4. Travel and accommodation for KemI experts	40 000	200 000	200 000	160 000	600 000
Reimbursable total	1 090 000	1 550 000	1 550 000	1 060 000	5 250 000
Assignment costs					
6. Material and equipment	0	100 000	0	0	100 000
7. Purchased services	150 000	990 000	650 000	500 000	2 290 000
Assignment costs total	150 000	1 090 000	650 000	500 000	2 390 000
Total costs	1 878 000	3 860 000	3 420 000	2 342 000	11 500 000

Any procurements that would be required in the cooperation will be the responsibility of KemI, supported by ZEMA.

6.1 Budget comments

The budget is divided into three different cost kinds, i.e. fees/salaries for KemI staff, reimbursable costs and assignment costs.

6.1.1 Fees/salaries (KemI staff costs)

Staff costs for the KemI long-term expert is based on remuneration on a monthly basis, including costs for social fees, pension provisions etc. (the monthly rate accounts for an estimated inflation rate of 2 % per year).

Staff costs for short-term experts from KemI are based on remuneration per hour and include cost for salaries and overhead costs. Out of the KemI staff costs, approximately 49 % is salaries and 51 % overhead according to the latest consultation with The Swedish National Financial Management Authority (KemI case reference H18-07328-1). The overhead is calculated in line with the principles used for the fees in the framework agreement between KemI and Sida (case reference H14-03043-13).

An approximate mean standard rate of 10 300 SEK per day has been applied for calculation of staff costs for the KemI short-term experts (the rate accounts for an estimated inflation rate of 2 % per year). KemI will later charge the actual staff cost per hour.

6.1.2 Reimbursable costs

KemI reimbursable costs follows the definition of reimbursable costs in the general conditions applicable to Purchased Services from Sida to Swedish Governmental Authorities. Examples could be costs for travel, accommodation and per diem for KemI staff.

Reimbursable costs connected to the long-term expert from KemI include school fees, housing, tax exempted supplements for additional costs etc.

The budget covers reimbursable costs for a long-term expert during 3 years. In case it is not possible to have a long-term expert present in Lusaka during year 3 of the cooperation, the corresponding budget will be used to cover reimbursable costs for short-term experts from KemI etc.

6.1.3 Assignment costs

Assignment costs refers to costs not related to KemI staff, but which KemI might be responsible for within the Sida financing, e.g. consultants, purchase of equipment, local costs for seminars, study trips to Sweden or a third country etc. Sida shall pay for such assignment costs that are set out in the budget and that are actually incurred by the Authority.

The development and establishment of an IT system to support registration of pesticides will require development of software, and also specific advice and support to make the register operative. It is therefore necessary to procure an IT expert for this development and implementing work. The procurement will follow the Swedish Law on Public Procurement (LoU). The costs will depend on the extent of the software work, which will be defined during the first part of the cooperation.

Further development of ZEMA's website will require access to persons with IT and communication skills. Sub-contracting of such expertise might become necessary and is included in the proposed budget. The budget will also cover costs for conducting field surveys on the use of pesticides in 7-14 additional districts.

7 Detailed description of the partners intended to take part in the cooperation

7.1 Zambia Environmental Management Agency

Zambia Environmental Management Agency (ZEMA) is a statutory body established by the Act of Parliament, the Environmental Management Act No. 12 of 2011. ZEMA is the key agency in the area of chemicals management in Zambia whose mandate, responsibilities and powers are provided for under the Environmental Management Act No. 12 of 2011. The Act lays down a number of requirements regarding environmental protection and pollution control including sound management of chemicals through a life cycle approach.

Among the areas regulated by ZEMA regarding chemical management are:

- Registration
- Importation/exportation
- Transportation
- Storage/disposal
- Distribution/labeling

Zambia being a part to chemicals and waste Multilateral Environmental Agreements and ZEMA appointed as the focal institution with extensive experience from donor funded

projects ZEMA has the autonomy and capacity to take on the responsibility of a bilateral cooperation with KemI.

Following the identification of a need for improved regional collaboration on pesticide risk management and risk reduction in the Southern African Development Community (SADC), the Southern African Pesticide Regulators' Forum (SAPReF) was formed in 2011. The current membership includes pesticide regulators and/or Designated National Authorities (DNA) of the Rotterdam Convention and pesticide risk managers with diverse backgrounds and disciplines from all the 15 SADC countries. SAPReF seeks to achieve sound management of pesticides and bio-pesticides used in agriculture and public health by working on common guidelines and legislation. Its members also address policies and practices for sustainable pest management aiming at reducing reliance on chemical pesticides. ZEMA has played an active role in the forum, both as a member but also as vice chair and currently chair of the Steering Committee, which provides oversight of SAPReF activities and implementation of its agreed action plan. Further, Zambia is currently receiving support from FAO on the work to establish a list of HHP products with the aim to phase out the most hazardous ones.

The implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is considered a cornerstone of chemicals management since it plays a central role in the entire supply and use chain of chemicals. As one of few African countries, Zambia conducted a gap analysis and developed a National Implementation Strategy (NIS) to facilitate the implementation of GHS. Through this strategy, Zambia has developed a standard ZS 708 on GHS and ZS 670 on transportation of dangerous goods, which are cross referenced in Environmental Management (Licensing) Regulation Statutory Instrument No.112 of 2013.

Regarding capacity building, staff from various Zambian institutions such as ZEMA, Environmental Council of Zambia, Zambia Bureau of Standards and others has participated in a number of International Training Programmes in chemicals management organized by KemI between 2007 and 2019. A list of organisations and their change projects can be found in Annex 3. Since the ITP first started, a total number of 17 persons has been trained with assistance from KemI and the Swedish government. As part of the training programme, participants develop change projects. Projects conducted by participants from Zambia have been related to, among other things, development of institutional infrastructure, strategic management of chemicals, importation border control, safe disposal of used pesticide containers, management of obsolete chemicals and phasing out of highly hazardous pesticides. Furthermore, change projects have also focused on improved level of comprehension of labels and safety data sheets.

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7.2 The Swedish Chemicals Agency

The Swedish Chemicals Agency (KemI) is a central supervisory authority under the Ministry of Environment. KemI works to ensure that the companies' and society's chemicals control is managed in a good way. KemI strives to reduce the risk of humans and the environment getting harmed by chemicals and the goal is to prevent damage. KemI is responsible for and promotes the environmental objective “A non-toxic environment” through improvements of chemicals management and legislation in Sweden, in the European Union (EU) and globally.

In Sweden, KemI supervises importers and manufacturers of chemical products and articles and supports the supervision of chemicals by municipalities and county administrative boards. KemI is also responsible for the authorization of the placing on the market and use of pesticides in Sweden.

The work within EU consists of support to the Swedish Government in the development of EU chemicals legislation and contribution to the work on substance evaluation and in the presentation of proposals for various risk mitigation measures.

Internationally, KemI supports the Swedish Government in the development and implementation of international chemicals conventions and agreements, participates in the Nordic, OECD and UN cooperation. KemI collaborates on a broad basis with businesses, authorities and other stakeholders in order to achieve sound management of chemicals.

KemI is also involved in development cooperation with support from Sida. KemI works at different levels in Asia, Africa and Eastern Europe, by assisting in the establishment of national legislation, building up institutional capacity in chemicals management through e.g. international training programs (ITP) and other trainings as well as by providing expert advice within key areas.

KemI's approach to capacity development programs is that the activities included in an intervention should contribute to capacity development on different levels; on individual level, on organisational level and on an overall enabling environment, as displayed in the below figure.

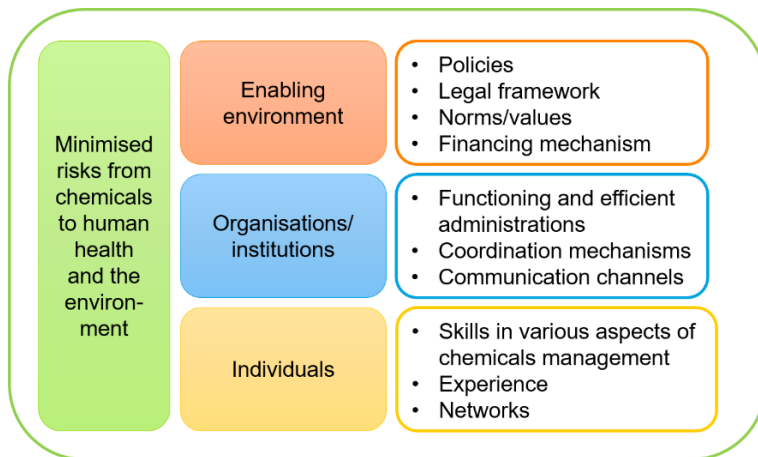


Figure 2. The various aspects covered by Kemi in the work on development cooperation and the different levels where the change and results are expected.

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7.3 Other key stakeholders

ZEMA is the main cooperation partner and they will engage with a number of other stakeholders of relevance for the management of pesticides in Zambia. Key stakeholders are found in the below table. In terms of training, persons from the Ministry of Health, Ministry of Labour, Zambia Bureau of Standard and from the University of Zambia could be invited to participate. In addition, it might be necessary to develop operational agreements among key regulators of pesticide management to ensure a robust registration scheme. Representatives from the private sector and from NGOs/CSOs will be invited to presentations of new proposals and hearings when considered relevant.

Stakeholder	Category	Roles
Ministry responsible for Agriculture	Government Institution	<p>Lead role in formulation of policies, plans and programmes in relation to Sustainable Agriculture</p> <p>Participates in the inter-agency coordinating mechanism</p> <p>Lead role in training of research and extension officers, and farmers</p> <p>Incorporation of issues of Pesticides POPs in the Agricultural Policy</p>
Ministry responsible for Health	Government Institution	Lead role in formulation of policies, plans and programmes in relation to environmental health

Stakeholder	Category	Roles
		Participates in the inter-agency coordinating mechanism To attain sound environmental health
Ministry responsible for Labour and Social Security	Government Institution	Lead role in formulation of policies, plans and programmes in relation to Labour and social protection Participates in the inter-agency coordinating mechanism
MUSIKA	Private Sector	Facilitating market access for small holder farmers Interacting with more than 2000 agro dealers And co-implementing a ZEMA training on safe use of chemicals for them Supporting companies collecting used pesticide containers
CropLife and Zambia National Farmers Union	Private sector	Training of agro dealers and farmers on safe use of chemicals Promoting corporate Social Responsibility in chemicals management Participates in the inter-agency coordinating mechanism
Non-Governmental Organization with interest in chemicals management	Civil Society Organizations	Safeguard human health and the environment An informed public on exposure to POPs Pesticides Facilitate the participation of vulnerable groups Represent the interests of vulnerable groups
Zambia Bureau of Standards	Government Institution	Facilitate the development of standards related to chemicals management Provision of laboratory services for management of chemicals Participates in technical working group for safe use of chemicals
University of Zambia School of Agricultural Science and Natural Science (Chemistry Department)	Academia	Provision of information on the current studies on safe use of chemicals Participates in technical working group for safe use of chemicals Participates in the inter-agency coordinating mechanism
Ministry of Water Development Sanitation	Government Institution	Coordinate the inter-agency coordinating mechanism

Stakeholder	Category	Roles
and Environmental Protection		<p>Lead role in formulation of policies, plans and programmes in relation to the environment</p> <p>Lead role in training industries for POPs Pesticides management</p> <p>To attain social, economic and biophysical sustainability</p>
Ministry responsible for Commerce, Trade and Industry	Government Institution	<p>Lead role in formulation of policies, plans and programmes in relation to Commerce Trade and Industry</p> <p>Lead role in development of national standards</p> <p>Competitive industries at national and international levels</p>
Ministry responsible for Finance	Government Institution	<p>Lead role in formulation of policies, plans and programmes in relation to collection of Tax</p> <p>National planning, mobilization and management of public resources</p>
National Institute for Scientific and Industrial Research	Research Institute	<p>Provision of laboratory services for management of chemicals</p> <p>Participates in technical working group for safe use of chemicals</p>

Annex 1: Results framework

Short-term objective 1 - A revised registration process for pesticides in Zambia to support registration of efficacious products that will not cause unacceptable harm to human health and the environment is established and the capacity of ZEMA staff and other relevant institutions has increased		
Output	Indicators	Means of verification
1.1 A revised pesticide registration process, including technical guidelines, Standard Operating Procedures etc., is developed	<p>Guidelines, checklists, templates etc. for applicants and pesticide registrars are developed and tested</p> <p>Guidelines and checklists for inspectors are developed and tested</p>	Guidelines, checklists and SOPs
Activity 1.1.1: Assess the need for development of secondary legislation and/or other amendments based on the results of the legal review		
Activity 1.1.2: Analyse available resources at ZEMA and design a suitable registration process		
Activity 1.1.3: Develop guidelines and checklists etc. for registrars, inspectors and applicants		
1.2 The capacity of ZEMA staff and other relevant institutions to handle pesticide application according to the new process has increased	<p>Ability to handle applications according to the new pesticides registration process</p> <p>Number of participants in trainings that have increased their capacity to assess pesticides</p>	<p>Pilot applications have been handled according to the new pesticides registration process</p> <p>Results from tests/quiz on the ability to assess pesticides</p>
Activity 1.2.1: Continuous technical assistance to support capacity building		
Activity 1.2.2: Training on hazard and risk assessment, GHS, decision making etc.		

Short-term objective 2: ZEMA has improved its management of highly hazardous pesticides		
Output	Indicator	Means of verification
2.1 Highly hazardous pesticides in use in Zambia are identified and listed	Knowledge on which pesticides used in Zambia that fulfill the criteria as HHPs	Results from use surveys List of licensed products fulfilling the criteria as HHPs
Activity 2.1.1: Conduct survey on actual use of pesticides in selected districts		
2.2 Available alternatives are identified and a management plan for HHPs is developed	Knowledge on suitable alternatives to HHPs in use in Zambia Agreed risk management measures	A management plan for HHPs in Zambia
Activity 2.2.1: Analyse available alternatives and make a needs assessment		
Activity 2.2.2: Conduct risk assessment of selected HHPs		
Activity 2.2.3: Develop a management plan for HHPs in Zambia		
2.3 New or amended legislation is proposed	Recommendations for amendments of the legislation is proposed. Draft legal text is available.	Document with recommendations Draft legal text
Activity 2.3.1: Draft legal text to include provision for bans and restrictions of HHPs		

Short-term objective 3: An IT system for registration of pesticides is established and the information on ZEMA's website is further developed		
Output	Indicator	Means of verification
3.1 A specification for an IT system is available and an IT consultant has been procured	Content/requirement for the IT system discussed and agreed Suitable consultant identified and procured	Specification for the IT system ToR for the IT consultant and contract
Activity 3.1.1: Develop a specification for the IT system based on ZEMA's needs and available resources, incl. a study visit		
Activity 3.1.2: Develop a ToR and procure an IT consultant		
3.2 An IT system for pesticide registration is available and tested	IT system for registration of pesticides developed and tested	Reports from development and testing
Activity 3.2.1: Provide input to the IT consultant during the development of the system		
Activity 3.2.2: Test the IT system		
3.3 Revised information related to pesticides for ZEMA's website is available	Information needs identified Updated information developed and published	Updated website with revised and new information
Activity 3.3.1: Analyse information needs related to pesticide management		
Activity 3.3.2: Develop text and guidance for ZEMA's website		

Annex 2: Detailed work-plan, June 2020 - June 2021

OBJECTIVES / ACTIVITIES:	2020							2021					
	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Preparations for Kemi long-term expert in Lusaka													
1 Practical arrangements (housing, visa applications etc.)													
Short-term objective 1 - A revised registration process for pesticides in Zambia to support registration of efficacious products that will not cause unacceptable harm to human health and the environment is established and the capacity of ZEMA staff and other relevant institutions has increased													
1 Analyse outcome of legal review and assess needs for development of secondary legislation etc.													
2 Analyse available resources at ZEMA for handling applications for approval of pesticides													
3 Training of ZEMA staff and other concerned stakeholders in FAO Pesticide Registration Toolkit, risk assessment etc.													
4 Design a suitable pesticide registration system and analyse needs for supporting documents													
5 Develop Terms of Reference for the pesticide board													
6 Presentation of a proposal for a pesticide registration process for ZEMA's management and other key institutions													
7 Develop guidelines/SOP for applicants and registrars to support the revised pesticide registration process													
8 Develop training materials on risk assessment, GHS etc.													
Short-term objective 2 – ZEMA has improved its management of highly hazardous pesticides													
1 Analyse list of HHPs in use in Zambia based on results from the FAO project													
2 Conduct pesticide use survey in selected districts													
3 Analyse available alternatives to HHPs used in Zambia													
4 Analyse the need for continued use of certain HHPs													
Short-term objective 3 - An IT system for registration of pesticides is established and the information on ZEMA's website has been further developed													
1 Analyse the new IT system and conduct needs assessment in relation to the pesticide registration system													
2 Study visit to Sweden or other relevant country for demonstration of pesticide registers to ZEMA staff													
3 Analyse information needs for various stakeholders and develop text and/or documents for the website													
Communication and dissemination of results													
1 Presentation of the collaboration to relevant stakeholders to make them aware of the collaboration and mobilize their engagement and support													
2 Develop a communication strategy													
3 Continuous work on communication with various stakeholders													

Annex 3: ITP projects conducted in Zambia

Year	Organization	Project title
2009	Environmental Council of Zambia	Improving institutional infrastructure for chemicals control and management – a case study for Zambia.
2010	Drug Enforcement Commission	Improvement of the Control and Monitoring of Precursor Chemicals Use in Zambia
2010	Environmental Council of Zambia	Strengthening of Chemical Importation Control at Border Points in Zambia
2010	Environmental Council of Zambia	Promotion of Safe Disposal of Used Pesticide Containers in Zambia
2012	Zambia Environmental Management Agency	Documentation of hazard data of chemicals imported to Zambia
2012	Zambia Environmental Management Agency	Promoting the sound management of obsolete chemicals
2015	Zambia Bureau of Standards	Workplace Chemicals Management Manual
2016	Zambia Environmental Management Agency	Management of Empty Pesticide Containers in some parts of Lusaka and Ndola
2016	Zambia Environmental Management Agency	Strategic Management of Chemicals in Zambia through Enforcement
2016	Zambia Bureau of Standards	Poor Management of Chemical waste generated from the Zambia Bureau of Standards Lab
2018	Zambia Environmental Management Agency	To identify highly hazardous pesticides in use in Zambia, assess the risk and propose alternatives.
2018	Ministry of labour and social security	Occupational safety and health in the use of chemicals
2019	Zambia Environmental Management Agency	Risk assessment of highly hazardous pesticides and identification of mitigation measures
2019	Ministry of Health	Provide a data base for the establishment of the National Poison Management Center for Zambia
2019	Zambia Bureau of Standards	Pesticide use and their effects on food, soil and water.
2019	Food and Drugs Control Laboratory	Efficient use and management of chemicals and their wastes
2019	Zambia Bureau of Standards	Supporting the Establishment and Implementation of Voluntary Chemical Management Systems for SME