

# **THE STATUS OF OBSOLETE PESTICIDES IN BOTSWANA AND STRATEGIES TO PREVENT FUTURE ACCUMULATIONS**

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THE STATUS OF OBSOLETE PESTICIDES IN BOTSWANA AND STRATEGIES AIMED AT PREVENTING FUTURE ACCUMULATIONS.

Background:

The Republic of Botswana is situated in Southern Africa and shares borders with Namibia, Zimbabwe, Zambia and South Africa. The country has a semi-arid climate with large area to the west covered by the Kalahari Desert. The population is 1.5 million and mostly occupy the eastern part of the country.

Diamond mining constitute the mainstay of the economy with agriculture employing the majority of Batswana.

Obsolete pesticides:

Obsolete pesticides are a major threat to human health and the environment. These are stocks of pesticides that have lost their efficacy because their shelf life has expired. Empty and contaminated containers also constitute the bulk of these obsolete pesticide, and also included is contaminated soil in pesticides storage areas.

The problem of obsolete pesticides has become common in the last two decades and is becoming widespread throughout the country. There has been an increase in the use of pesticides in Botswana to combat outbreaks of locusts, quelea birds, tsetse fly, mosquitoes and many other pests in agriculture and in public health. The increased use of pesticides has resulted in accumulation of obsolete pesticide stocks, because there has not been any plan in place to dispose of left-overs and empty containers.

Obsolete pesticides in agriculture

The problem of obsolete pesticides in agriculture is fairly recent and dates back to 1986 when large quantities of pesticides were procured to combat the locust outbreak. The amount of obsolete pesticides stocks is estimated at 200 tons and large quantities of contaminated soil (Waste-tech Hazmat Support Services April, 2000). The inventory represents only a portion of the obsolete stocks of pesti-

cides with the Division of Plant Protection. Other government agencies, farmers and the chemical industry still need to undertake an inventorisation exercise to determine amounts of stocks in their stores. Thus the figure is obviously more than the documented 200 tonnes.

Over the past fifteen years, the use of pesticides has steadily increased in Botswana. This trend came about because more land was opened for commercial farming in Pandamatenga in the North West of the country, the venturing into horticulture and the continuous outbreak of pests particularly locusts in the late 1980s.

The trend has been accompanied by a growing problem of how to dispose of waste generated by the continued storage and an accumulation of empty pesticide containers. It is worth noting that some of these obsolete stocks came in as donations during the locust outbreak in the late 1980s, and have been lying unused since. The bulk of the obsolete stocks have been collected and accumulated at a central store approximately ten kilometers from the capital, Gaborone.

#### Funding:

The Ministry of Agriculture formulated a project under National Development Plan (NDP VIII) aimed at disposing of obsolete pesticides stocks. Initially it was thought that six (6) small incinerators be built around the country for disposal purposes. With time, this project has been abandoned in favour of repackaging obsolete materials and exporting them to dedicated incinerators in the developed world.

Funds are currently being sourced from government. According to Waste-tech HAZMAT Support Services Consultants, at least 10 million U.S dollars are needed for the disposal project.

This is substantial and financial assistance is needed to help undertake the project. FAO estimates costs of repackaging transportation from Africa and incineration in Europe to be US\$5,000 dollars per tonne of obsolete pesticide waste. Request for funding from government were made on the basis of FAO estimates.

There has been generally a positive attitude by government to get rid of the obsolete stocks, in recognition of the hazards they pose to the environment and human health.

Funding is needed to undertake inventories of obsolete pesticides with other stakeholders outside the Ministry of Agriculture. Once an inventory for the whole country is completed, then a comprehensive disposal project would be formulated and embarked on. The project would need much more than the 1 million US Dollars requested for. International support is therefore sought to assist in undertaking the project. DANCED and USAID has indicated interest in assisting Botswana in this regard.

## Prevention of future stock accumulations

Lessons have been learned from obsolete pesticide stocks that have accumulated over the years. One of the lessons is that, it is much more costly to dispose of obsolete pesticides than to purchase stocks of pesticides.

Also that obsolete pesticides pose a major threat to public health and the environment. These two lessons give the reasons why accumulation of obsolete pesticides should be avoided at all costs.

A chemical management strategy is therefore necessary so that pesticide stocks are well managed in future. Prevention of future accumulations is one such attempt. Accumulations can be avoided by ordering and purchasing a one year's requirement of pesticides.

Stocks of pesticides should be kept as low as possible, and purchases of pesticides should only be made when there is need. Donations should not be accepted in excess of the requirements, and large quantities with a short shelf life should not be stocked. The management of the store should comply to the principle of first in, first out to avoid old stock remaining unutilised.

The other way of avoiding large stocks of obsolete pesticides is to resort to Integrated Pest Management Strategy (IPM) as a way of managing pest situations. This strategy emphasizes the use of cultural and biological processes in pest management and the use of pesticides as a last resort. Hence pesticides are used when all other methods have not yielded good results.

The Pesticide Industry should undertake the "Duty of Care Programme" through the Global Plant Protection Federation (GCPF). This involves collecting all unwanted stocks back to the original manufacturers for reformulation.

### Recommendations:

1. Raise Public awareness on the risks and hazards to human health and the environment associated with accumulations of obsolete pesticide stocks.
2. Prevent future accumulations of obsolete pesticide stocks by procuring quantities of pesticides that could be used in one year. Do not accept more pesticides than you need from donors, during pest outbreaks.
3. Survey and compile an Inventory of Obsolete Pesticides from all stakeholders to ascertain quantities available around the country.
4. Develop a training manual on pesticide stocks management and train different stakeholders.
5. The pesticide industry should take responsibility in the management of pesticide stocks (Duty of Care Programme) so that obsolete stocks be returned to original suppliers of affected products for reformulation.

6. Develop a project on disposal of obsolete pesticides with donor community involvement. FAO has recommended that a meeting of the donor community be organized, as a matter of urgency.

### Conclusion

The current stocks of obsolete pesticides should be inventorised urgently in order to kick - start the disposal process. Once all the unwanted stocks are disposed, a rigorous public awareness campaign should be launched to make sure that any such accumulations of obsolete pesticides do not occur in future. Obsolete pesticides stocks should be avoided at all costs.

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