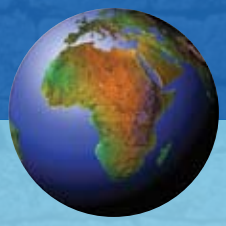
Our Environment, Our Wealth



CHEMICALS

The goal of balancing the economic and social benefits of chemicals with their health and environmental risks is easy to understand and agree to. But how to achieve this balance is a highly complex problem – or rather, it requires understanding and solving many complex problems. Managing the risks of chemicals is interconnected with many other issues, including wastes and pollution, global warming, resource depletion, agriculture, biotechnology, loss of biodiversity, poverty and women's rights, UNEP-2004a

Chemical substances, and their derivatives, are widely used in many development and economic fields, including industry, agriculture, mining, water purification, public health particularly disease eradication, and infrastructure development. However, production, storage, transportation, and removal of these substances can pose risks to people and the environment. The challenge facing Africa is how to harness the benefits of chemicals, while minimizing the costs. While Africa has made significant progress in developing a regional framework for the management of chemicals throughout their life cycle – production, transportation, storage, use and disposal – much still needs to be done in integrating this approach into national and sub-regional systems for implementation.

- Although currently, Africa is neither a major consumer nor producer of chemicals in global terms, the level of risk faced by poor countries is disproportionately higher than in those with sufficient resources to effectively manage and monitor chemical use.

- Although Africa's contribution to value added production is very small, current trends suggest that its contribution to global production of chemicals will continue to grow. Between 1976 and 1996, this sector grew by 2.5 per cent a year.

- Total demand for chemicals will increase more rapidly in the developing than in the developed world. By 2020, the developing world will increase its share from 23 per cent of global chemical demand and 21 per cent of production in 1995 to 33 per cent and 31 per cent, respectively.

- The strongest chemical industries in the region are found in Northern Africa (Algeria, Egypt, Libya, Morocco and Tunisia), Western Africa (Nigeria) and Southern Africa (South Africa). The development of chemical industries in these sub-regions has been facilitated by access to larger markets and by the presence of natural resources that can support growth in this sector, such as natural gas and oil, and well-developed infrastructure and communications.

- Industry predictions are that future global growth will be led by pharmaceuticals, followed by specialty chemicals, agricultural chemicals, textile fibres and industrial chemicals. A number of African countries have capacity in pharmaceuticals production and many are investing in oil and gas, which are key drivers for the chemicals industries.

- The production of agricultural chemicals is a key focus of the chemical industry in Africa. Africa contributed approximately 4 per cent to total world pesticides (insecticides, fungicides, disinfectants) production in 1998, and approximately 5 per cent in 2002.

- In 2002, Africa contributed only about 3 per cent of total world nitrogenous fertilizer production. The highest contributors from Africa were Egypt and South Africa; however, production from these two countries tended to decline over the period 1998-2002. In the same year Africa's contribution to global production of phosphates fertilizer was approximately 7 per cent. However, production in this sector also declined from 537 tonnes in 1998 to 369 tonnes in 2002.

- Mining chemicals produced in Africa include explosives and accessories such as fuses and detonators, mineral processing chemicals such as leaching agents, floatation agents, smelting and refining chemicals.

- It is estimated that less than one per cent of the world's 250,000 tropical plants has been screened for potential pharmaceutical applications. At current extinction rates of plants and animals, the Earth is losing one major drug every two years. Africa can effectively linked the development of the pharmaceutical sector to its objectives of sustainably using biodiversity.

- In Africa many cannot afford commercially produced medicine, in western Africa for example as many as 80% of the people depend on traditional medicines. Africa's market share as at 1997 in pharmaceuticals, accounted for only 1.3 per cent; the total trade was worth about US$291 million.

- Chemical-related soil degradation in Africa affects 51 million ha of land, with about 40 million of these being nutrient deficient, and salinity affecting about 6 million ha. Inappropriate fertilization and irrigation practices results in salinization and acidification.
- Despite the environmental threats, posed by DDT it has been the most cost effective and efficient way of controlling malaria. This is the main justification for the continued use of DDT, and its exemption under the Stockholm Convention until such time that alternatives are found. However, while DDT is important for disease control, there are concerns that its continued use constitutes a health risk especially for countries with limited chemical management infrastructure.
- Where excessive wastes are discharged into ecosystems, ecosystems are unable to cope and waste-treatment technologies are required to restore or preserve ecosystem balance, and thus reduce or eliminate the risks to human health.
- Recycling can be an important environmental management strategy, however where waste contains POPs or heavy metals, recycling can lead to the accumulation of these pollutants and increased human exposures through food and water.
- Inorganic chemical compounds and POPs present in food and water present risks to people. In small quantities fluoride is good for teeth, however in high concentrations it destroys teeth, accumulates in bones which results in crippling skeletal damage, and because children are still growing they are at highest risk. As of 2004, cases of dental and skeletal defects have been reported in Ethiopia, Eritrea, Kenya, Niger, Nigeria, South Africa, Sudan, Tanzania and Uganda.
- Toxic substances such as arsenic, cadmium, lead and sulphuric acid contaminate water and soil, and affect human health. More than 50 000 tonnes of obsolete pesticides have been accumulated in Africa contaminating tens of thousands of tonnes of soil. These obsolete pesticides represent a major threat for human health
- Heavy metals pose serious threats, particularly to children and foetal development. In Africa, between 18-24 per cent of children have concentrations of more than 10 micrograms per decilitre (μg/dl) of blood.
- In many mining centres, average atmospheric lead concentrations reach 0.5-0.3 μg/m3 and exceed 1 000 μg/g in dust and soils. The people of Kabwe, in Zambia, face a serious threat from lead and zinc mining activities. At its peak, Kabwe was the largest and richest lead mine in Africa. Unfortunately there were few pollution controls. The vegetation, water and soil are contaminated and about 90 000 children are at risk from lead poisoning. Concentrations of 5 μg/dl threaten brain development; in Kabwe, many children have concentrations exceeding 300 μg/dl. Average blood level is 60 -120 μg/dl.
- Contaminated sites and obsoletes stocks present serious problems for Africa which require immediate actions. Estimates suggest that across Africa at least 50 000 tonnes of obsolete pesticides have accumulated. They pose serious health threats to rural as well as urban populations and contribute to land and water degradation.
- As chemical use and production increases Africa's chemical management institutions, which already have limited resources and capacity, will be further constrained and overburdened and will not cope. Measures and systems need to be developed to decrease exposure to negative impacts and to reduce human vulnerability.

The management of obsolete chemicals, stockpiles and waste management presents a serious threat to human well-being and the environment in many parts of Africa. Developing a more effective chemical management system will require addressing the specific challenges Africa faces. There is already an extensive global system for chemical management, and it is important not to duplicate efforts but to create synergies and better systems for implementation. Africa faces challenges related to the availability of information and the communication of this to users, inadequate capacity to effectively monitor the use of chemicals, lack of access to cleaner production systems and technologies for waste management, as well as poor capacity to deal with poisoning and contamination. Recognition of the risks that chemicals pose to the human health and the environment has led to significant progress being made at the international levels to address this through Agenda 21, the WSSD, the Rotterdam Convention and the Stockholm Convention.

For More Information Please Contact: Nick Nuttall, UNEP Spokesperson, Office of the Executive Director, on Tel: 254 20 623084, Mobile: 41 79 596 5737, e-mail: nick.nuttall@unep.org or Angèle Luh - Sy, Information Officer at the Regional office for Africa on Tel: 254 20 624292, E-mail: angele.luh@unep.org

African Ministerial Conference on the Environment (AMCEN),
c/o UNEP Regional Office for Africa
P.O. Box 30552, Nairobi 00100, Kenya
Tel: (+254) 20 7624616, Fax: (+254) 20 762392

UNEP

AEO

United Nations Environment Programme (UNEP)
P.O. Box 30552, Nairobi 00100, Kenya
Tel: (+254) 20 7623287, Fax: (+254) 20 7624309
E-mail: Africa.Coordinator@unep.org