

Towards a Policy on Chemical Waste Stockpile Destruction and Transport in Africa:

Ensuring Environmentally Sound Management of Existing Chemical Wastes and Stockpiles through the Stockholm, Basel and Bamako Conventions

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1. Introduction

Toxic chemical stockpiles and wastes, including, persistent organic pollutants (POPs) and obsolete pesticides stocks, present an imminent threat to human health and ecosystems even in very small amounts. Thus the objective of eliminating such threats particularly in developing countries which often lack the resources or infrastructure to safely store or manage such chemicals is a laudable goal. However, real danger exists that if very careful attention is not paid to *how* such chemical wastes are to be disposed or eliminated, any policy or initiative which accelerates their disposal could very easily cause in the long run, more environmental damage than it prevents.

For example, if we hastily allow POPs to be dumped in landfills which will eventually leak (as all landfills will), or if we burn them in incinerators which are known to produce more POPs by-products (as all incinerators do), then we may be guilty of not really solving a global toxic crisis but simply would have *moved* it from commercial cycles to natural ones.

Likewise, in our haste to rid the planet of hazardous biocides, we could mistakenly justify risky transport which could result in devastating accidents when in fact such wastes might be best dealt with safely on-site. Or we could inappropriately make waste management decisions without first involving all stakeholders and civil society.

In order to avoid such mistakes, it is absolutely vital that governments and industry chart a policy course which ensures the best available environmentally sound management and decision-making methods. It also means, that at a minimum, the two most relevant international instruments governing the issue – the Basel Convention on the Control of the Transboundary Movement of Hazardous Wastes and Their Disposal, and the emerging Stockholm Convention (On the Elimination and Control of Persistent Organic Pollutants) must be rigorously applied from both a

legal and policy perspective. And in the present context of Africa, the regional Bamako Convention must also be followed closely, particularly where it is found to be more rigorous than the Basel Convention. In our view, as these instruments were achieved by consensus, provisions of these Conventions and their amendments as well as some other internationally recognized principles and norms must be considered to hold validity regardless of whether or not they have yet entered into strict legal force in general or for the relevant countries concerned.

In this paper we have sought to first examine these relevant obligations and principles and then to distill these and rank them as to their relative importance. Finally we will discuss how such a hierarchy can be used in practice. The creation of such a hierarchy we believe can prove an invaluable tool for governments and a basis for guiding policy and decision-making in the many differing circumstances that can be found when chemical stockpiles are to be destroyed in Africa. We have accomplished this process of distillation and priority recommendation with two overarching objectives in mind:

1. To accomplish POPs and chemical stockpile destruction in the most environmentally sound, least risky manner.

2. To involve all stakeholders including civil society and potentially impacted persons in a transparent decision-making process.

2. Applying International Law and Principles

2.1 Application of the Basel Convention and Basel Ban Amendment

It is vital to note at the outset, that the Basel Convention's primary responsibility with respect to issues of destruction of chemical wastes stockpiles involves that which the treaty was designed to regulate – the transboundary movement of hazardous wastes. While the Basel Convention is very suitable for issues involving principles and obligations of waste movements, it is duly noted that the Basel Convention is most often ill equipped to deal with issues of disposal per se. There are three reasons for this. First, the Basel Convention's provisions are almost entirely written in the context of transboundary movements which need not apply in cases where there is none. Second, all but the most general objectives regarding disposal of wastes are not legally binding on the Parties. And Third, even the technical guidelines, are not adequately prescriptive for the best methods for POPs and chemical waste stockpiles, they do not emphasize destruction and moreover they are out of date with little ability to keep them current. BAN has further elaborated this case (See our Briefing Paper #5 on the Subject (<http://www.ban.org/Library/briefp5.pdf>)).

Despite the Basel Convention's shortcomings with respect to waste disposal, the Convention and its amendments are strong on issues of the *transboundary movements* of hazardous wastes. Most importantly, the Convention has the following primary objectives which will impact waste management in Africa. The Convention requires its Parties:

- 1) To minimize the generation of hazardous and other wastes. (Article 4, para 2 (a))

- 2) To minimize the transboundary movements of hazardous wastes. (Article 4, para 2 (d))
- 3) To ensure that each country, to the extent possible, becomes self-sufficient in hazardous waste management and therefore minimizes transboundary movements of such wastes. (Article 4, para 2 (b) and (d)). This is recognised as being important for minimizing risk of transport, minimizing adverse affects of wastes in the recipient country and also as an incentive to ensure that wastes are reduced at source. In addition to the above obligations, transboundary movements should only be allowed if there is a need for waste as a raw material in the destination country, or if the country of export lacks adequate technical capacity to manage the wastes. (Article 4, para 9)
- 4) To ensure that wastes must be managed in a way that prevents pollution from such wastes and to minimize any consequences of any pollution that is produced. (Article 4 para 2 (c)).
- 5) The Convention forbids trade between Parties and non-Parties, absent a special bilateral or multilateral agreement. As only 31 African States out of 53 eligible countries are Parties to the Basel Convention, this may impact any plans to create a regional chemical waste management facility which might foresee intra-African waste trade. (Article 4 para 5), (Article 11)

Additionally, in 1995 the Basel Convention adopted the Basel Ban Amendment which bans the export of hazardous wastes from OECD countries, EU member states and Liechtenstein to all other countries. This is most relevant in noting with respect to forbidding any schemes to establish technologies for waste disposal in Africa which are dependent on waste imports from developed countries.

2.2 Application of the Bamako Convention

The Bamako Convention echoes some of the language of the Basel Convention. However in addition the following special provisions should be noted:

- 1) The import of hazardous wastes into the continent of Africa from outside the Continent is prohibited (Article 4, para 1). This will thus forbid *any* non-African imports of hazardous waste.
- 2) The Bamako Convention includes as part of its definition of hazardous wastes, “hazardous substances which have been banned, cancelled or refused registration by government regulatory action , or voluntarily withdrawn from registration in the country of manufacture, for human health or environmental reasons.” This provision is very important with respect to preventing future pesticide and chemical stockpiles and could also lead to legal actions against importers of such materials. (Article 2, para 1 (d))
- 3) The Bamako Convention requires its parties to impose strict, unlimited liability as well

as joint and several liability of its hazardous waste generators. This will go a long way toward ensuring true environmentally sound management of wastes with respect to waste management in Bamako member states. (Article 4, para 3 (b))

4) The Bamako Convention prohibits, (absent a special bilateral or multilateral agreement) imports of hazardous wastes from a non-Party, and there are only currently 17 Bamako Parties out of 51 African States. This could mean that efforts to establish a regional chemical waste facility in Africa will face difficulty. (Article 4, para 1 (b))

5) Parties are to promote clean production methods. *Incineration is specifically excluded from the definitions of clean production methods.* This means that the introduction of incineration technology into Bamako Parties will be very difficult to justify. (Article 4, para 3 (g))

2.3 Application of the Stockholm Treaty

The new draft treaty on persistent organic pollutants (POPs) has been finalized and is not expected to change at its adoption conference in Stockholm later in 2001. It breaks new ground in that it agrees for the first time to phase out and eliminate certain chemical compounds and moreover provides strong criteria as to what should be done with existing stocks. The treaty has made a clear push for *destruction* of the wastes as opposed to simply disposal. Moreover, the treaty has defined destruction rather rigidly. While currently the treaty is only designed to deal with 12 specific POPs, the provisions of the treaty from a policy perspective can be applied to obsolete pesticides and many other toxic wastes that have been designated for destruction as well. The relevant provisions of the new POPs treaty are as follows:

1) The draft treaty prohibits the import and export of POPs except for the purposes of environmentally sound disposal or for very limited specified uses such as DDT for vector control. This is very important to prevent numerous POPs from being imported into Africa in the future. (Article D, 1 and 1 bis)

2) For intentionally produced POPs, the draft treaty calls for a prohibition on future manufacture with some exceptions and a goal of elimination for existing stocks (Article D). Further, the precautionary principle is to be employed with respect to adding new POPs to the treaty. These agreements are vital as policy departure points with respect to preventing future POPs and chemical stockpiles.

3) The draft treaty establishes "elimination" as the goal for byproduct POPs where feasible and continuing minimization where not feasible. This elimination goal includes dioxins and furans. This is important as it will be "bad faith" now for countries to justify allowing new sources of POPs (e.g. new incinerators that inevitably produce new dioxins and furans) while there exists an obligation to eliminate and minimize their production. (Article D, para 3)

4) The draft treaty calls for substitution of modified materials, products and processes to prevent the formation and release of dioxins and furans. The important thing here is to note that *processes* are included. That would indicate that there is an obligation to whenever possible substitute alternative processes (for example alternatives to incineration) in order to prevent the formation of dioxins and furans. (Article D, para 3)

5) The Basel Convention will not be allowed to solely provide the prescription for how POPs stockpiles and wastes are to be disposed. This is extremely important, for as BAN has argued, the Basel Convention is ill equipped to deal with POPs wastes in a manner which is legally binding, up-to-date and most environmentally sound. Rather, the POPs treaty prescribes that POPs wastes should never be recycled and that with few exceptions, they must be destroyed or irreversibly transformed so that they do not exhibit POPs characteristics. This will mean that land filling, recycling and incineration which produces by-product POPs will be very difficult to justify. What will be needed now will be the new generation of chemical and not thermal destruction methods. (Article D, para 4)

6) Incineration is explicitly listed in Annex C pertaining to unintentional POPs (dioxins) as one of the main industrial source categories for dioxins. This lays to rest erroneous argumentation that incineration does not produce dioxins and furans. (Annex C)

7) The POPs treaty makes explicit that public access to information, and public participation in addressing POPs is to be promoted and facilitated. This combined with the provisions of agenda 21 (see below) should be taken as a mandate for transparency and openness in access to all environmental information as well as access to decision-making with respect to POPs and hazardous chemical wastes. (Article H)

8) Funding will be provided via the Global Environmental Facility (GEF) for assisting developing countries in fulfilling the objectives of the Convention. This is very important as additional funding and pilot projects should now become available to appropriately rid Africa of POPs waste stockpiles. (Article K)

2.4 Application of Other Relevant Accepted Environmental Principles

1) Right-to-Know / Environmental Democracy Principle: This principle has been adopted in various ways in many countries. Internationally it has been adopted in part by the Stockholm Convention (Article H) and more elaborately in Agenda 21 as follows:

“Critical to the effective implementation of the objectives, policies and mechanisms agreed to by Governments in all programme areas of Agenda 21 will be the commitment and genuine involvement of all social groups.” (Chapter 23, para 1)

“One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of

participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures.” (Chapter 23, para. 2)

2) Generator/Producer Responsibility – Polluter Pays Principle: These principles are becoming well established in the OECD, and the EU. The polluter pays principle was referred to in the Rio Declaration (Principle 16). Basically these principles call for corporate responsibility – that the generator of pollution or waste or the producer of products which will become waste, take economic and environmental responsibility for the wastes or products along their entire life cycle and not to pass these burdens onto taxpayers, consumers or others downstream (more on this below).

3) Principle of Environmental Justice: This principle related to both the Polluter Pays Principle and that of Environmental Democracy has become well accepted in the United States domestic environmental policy. It holds that environmental costs must not be disproportionately born by the poor, the marginalised or disenfranchised in society. While this principle is not as yet globally established, it should be noted that most of the issues concerning Environmental Justice will be resolved if the impacted public is truly integral in decision-making as the Environmental Democracy principle demands.

4) Transboundary Harm Prevention Principle: Principle 21 of the 1972 Stockholm Declaration and Principle 2 of the 1992 Rio Declaration similarly state:

“States have, ...the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”

This principle was very influential in the formation of the Basel Convention and similar regional agreements such as Bamako which limit exports of hazardous wastes. It is also applicable to waste trafficking over or through the global commons (seas and airspaces).

3. Towards a Comprehensive POPs Destruction Policy

After reviewing the above provisions found in the norms of relevant international law, the common themes of a coherent and environmentally sound waste management policy for the chemical stockpiles in Africa become clearer.

Past experience has demonstrated that in practice difficulties arise when the different concerns

addressed in the treaties appear to be in conflict. This is often the case with respect to questions of how and where to dispose of stockpiles. Many times we will encounter questions, for example, of whether it is better to avoid transboundary movements of hazardous wastes when that choice might mean that less than optimal destruction will take place or rather to favour proper destruction even when it means transboundary movement of the waste.

It is our purpose in this paper to address and not to dodge these questions. What is needed is a hierarchy of principles derived and distilled from the three above named treaties and other international norms to serve as a guide to decision-makers.

3.1 Hierarchy of Fundamental Principles to Shape African Chemical Stockpiles Destruction Policy

Ideally all of the following four fundamental principles can be applied in a given circumstance. In practice however it is often the case that they cannot be. While any prioritization of competing values will likely prove controversial at times, the Basel Action Network (BAN) believes the following hierarchy (listed in order of importance) will best lead to the achievement of our two fundamental objectives of inclusive decision-making via democratic principles and minimizing environmental harm and risk. All of the four fundamental principles outlined below assume that all actions will be legal and indeed that all wastes will have been first placed in safe, secure storage wherever they exist.

I. Environmental Democracy: *All waste management decisions must be made following full disclosure of all relevant information and with the active participation of all stakeholders, including civil society.*

It is a fundamental tenant of democracy that those impacted by a decision be an integral part of that decision. If this is indeed true then there will be environmental justice. The recent unfortunate experience with a bilateral Danish aid project which initially ignored civil society, against their own policies, involving a retrofit of a cement kiln in Mozambique to burn collected obsolete pesticides provides a vital lesson in this regard for Africa and for the world (See *Something Rotten From Denmark: The Incinerator "Solution" to Aid Gone Bad in Mozambique*, *Multinational Monitor*, December 1998, Vol. 19, No. 12., found at www.ban.org/Library/rotten.html). This principle has been recognized in the Stockholm Treaty and in Agenda 21 as noted above.

II. Complete Destruction over Disposal: *Destruction, that destroys POPs and organic pesticides at destruction efficiencies of effectively 100%; that contain all residues; and do not at the same time produce by-product POPs, should always be favoured over disposal methods such as deposit, injection, solidification, encapsulation, or incineration. Destruction technologies must never be instituted where they might serve as a disincentive to minimize waste generation.*

This conclusion can clearly be drawn from the Stockholm and Bamako Conventions. It is well

known that even the most advanced incinerator does not destroy all POPs but rather produces POPs (dioxins and furans) as byproducts. Because these POPs are so highly dangerous in such minute quantities, it is vital that we begin to phase-out the use of incinerators. Indeed the Stockholm Treaty goal of continued minimization and ultimate elimination of dioxins and furans, justifies a moratorium on all new man-made sources. And that treaty recognizes incinerators as being a major source of dioxins and furans.

Although it has been common practice in the past to treat wastes by combustion technologies like incineration, and such methods have generally been accepted to date as “environmentally sound destruction”, these technologies are now seen under the lens of the Stockholm and Bamako Conventions as being technologically inferior in light of the new wave of non-combustion chemical destruction technologies (see “Technical Criteria for the Destruction of Stockpiled Persistent Organic Pollutants”, Greenpeace, 7 October 1998. Available at: www.greenpeace.org/~toxics/reports/alttech2.pdf). Some of these newer technologies are omnivorous for organic compounds such as organo-phosphate pesticides.

III. On-site Destruction: *Whenever technologically feasible (see Principle 2 above), socially acceptable (see Principle 1 above), and where such technologies will not undermine waste minimization strategies, destruction technologies should take place in situ, or as close to the point of origin as possible to minimize risky movement of waste and avoid transboundary movement.*

The avoidance of transport and transboundary movement in the case of existing stockpiles is in keeping with the aims of the Basel and Bamako Conventions which focus their attention on transboundary movements. Both treaties seek to discourage transboundary movements and in fact, prohibit the transboundary movement of wastes in Africa between Parties and non-Parties absent a special bilateral agreement. This will make any notion of developing regional centres in Africa for destruction quite difficult even if they were seen as a good idea from other standpoints. However it must be duly noted that the Basel and Bamako Conventions fully recognize that transboundary movements of hazardous wastes may be necessary where the country where the wastes reside, lacks the adequate technical capacity to manage such wastes (e.g. as per II. above).

Implicit in the concerns over transboundary movements of wastes is the concern over accidents. Indeed the danger of accidents during transport of toxic chemicals is well documented regardless of whether the movements are transboundary or not. Terrestrial transport infrastructure in African states can be very rudimentary. Devastating impacts can result from spills in areas of high human population, crop lands, water supplies and critical wildlife habitat. Such realities make any movement of such wastes a risky business irrespective of national borders.

Riparian and marine transport presents its own even more critical risk, in that such spills are often of immediate biological impact and cannot be retrieved or cleaned-up. A spill of PCBs or pesticides at sea, for example, or in biologically rich coastal waters could have catastrophic and long-term effects. Further, known biological concentration and global distillation effects characteristic of POPs can exacerbate impacts. The history of tanker spills and container losses at sea suggests that such accidents are inevitable. If such traffic in POPs and toxic chemical wastes is

allowed to increase due to the increased effort to rid the planet of such stockpiled wastes, we may expose our environment to unacceptable risk.

Fortunately many of the non-combustion technologies for destruction of chemical wastes are mobile in nature and can be moved to the actual location of the stockpile. Some destruction methods such as for PCBs can actually be “strapped-on” to existing large capacity transformers and capacitors in a removal and replacement process.

IV. Generator and Producer Responsibility / Polluter Pays Principle: Generators of wastes and obsolete stockpiles should be held ultimately responsible, (financially, legally and morally), for its destruction.

While the Polluter Pays Principle is well accepted, some find it more difficult to apply this same principle to products that eventually become wastes. Increasingly however, it is seen as unacceptable that impacts of product design are born by users downstream. While it is recognized that users hold some responsibility for the environmental impacts of products, there is very little they can do in terms of impacting fundamentally environmentally destructive design (e.g. use of toxic substances). This realization has made the principle of *extended producer responsibility* (EPR) which makes the producer responsible for the entire life cycle of a product, rapidly become a part of both corporate and governmental policy around the world. EPR requires that producers either take back spent products and manage them appropriately or ensure that others do. EPR thus creates a strong incentive for producers of products to design them with an aim toward less material and hazard content and improved recyclability. In this way, society can get to the root of the problem of our waste crisis which lies upstream. With respect to future persistent organic pollutants (POPs) or other problematic toxic chemicals, EPR will require producers to test and redesign their products in order to prevent downstream impacts.

These downstream burdens are particularly acute in developing countries which often lack the expertise and infrastructure. In numerous instances in Africa and around the world, industry has already invoked EPR by voluntarily making efforts to finance the collection and disposal of obsolete pesticides stocks. Usually this is done only when the actual producer of the specific stock is identified. However a case can be made that when this identification is not possible, industry associations such as the Global Crop Protection Federation (e.g. for pesticides) should bear the burden of the collection, cleaning up, and destruction of the pesticides.

3.2 Principles in Practice

While the goal is to adhere to as many of the above principles as possible, we have found that in practice it is often difficult to uphold all of the policy principles at the same time in a given situation. Usually, several of the four primary principles are in play at any one time, and at times other unforeseen principles will enter the picture. At times the principles are complementary and at other times they are in competition with each other. For this reason we have found it important to prioritize the principles and place them into a hierarchy while noting that in practice there may

always be exceptions to the recommended rule.

We believe for example that there are very few instances where it is justified to ignore the Environmental Democracy Principle. It is almost always counterproductive and morally unacceptable to make waste disposal decisions while ignoring the principle of stakeholder involvement, but even that principle will at times be necessary to short-circuit if and when governments must act in emergency situations without building the preferred consensus.

Particularly, it has been noted that a conflict often will exist over whether it is preferable to utilize preferred destruction methods when that might mean moving or exporting the wastes in question and thus violating the On-site Principle. We believe that in general there is likely to be more risk to the environment via utilizing polluting technologies than by moving the wastes even long distances to accomplish non-polluting destruction. This is particularly true if the proposed dirty facility is seen as permanent or long term, and in light of the need to establish strong precedents to move society toward the more promising cleaner technologies. Here again however exceptions to the rule can be expected on rare occasions.

At other times local groups will demand that a proposed technology not take place in their community regardless of how technologically and environmentally sound it might be. And there may be very good reasons for this, such as the knowledge that regardless of the technology, the ability to operate it successfully and safely is non-existent. This reiterates why it is so important to first and foremost utilize the first principle of environmental democracy and inclusion. It is our belief that when people are able to calmly sit down and examine the big picture they will not only make the decision that is best for their environment but for the entire global environment as well. Those most impacted by a decision must be ultimately the view most respected.

Finally, the principle of Generator/Producer responsibility, while it is very important from the point of view of short term justice as to who should finance the operation involved, it is not seen as important as accomplishing the task in a way that will not cause permanent harm.

4. Summary

The Basel Action Network (BAN) has been involved in numerous instances of complex questions involving both disposal technologies and transboundary movements of wastes. Currently, various instruments of international law address these various issues but not within one comprehensive set of provisions or obligations. Thus with respect to the specific issue of destruction of obsolete and waste chemical stockpiles in the continent of Africa, we have attempted to combine and distill the fundamental obligations and principles that will lead to the furtherance of two primary objectives: **1) inclusive, democratic decision-making; and 2) minimizing environmental harm and risk.**

We have outlined both the relevant legal (or soon to be legal) obligations of various applicable international instruments of law, and their relevant principles as well. Armed with this information we have distilled the most fundamental principles and placed them in a policy hierarchy while noting that such a hierarchy is for guidance purposes and will at times be subject

to exceptions based on the complexity and specificity of given circumstances and available options. This hierarchy assumes that the chemical stockpiles or wastes are safely and securely stored and that all legal obligations will be adhered to. This hierarchy is as follows:

I. Environmental Democracy: *All waste management decisions must be made following full disclosure of all relevant information and with the active participation of all stakeholders, including civil society.*

II. Complete Destruction over Disposal: *Destruction, that destroys POPs and organic pesticides at destruction efficiencies of effectively 100%; that contain all residues; and do not at the same time produce by-product POPs, should always be favoured over disposal methods such as deposit, injection, solidification, encapsulation, or incineration.*

III. On-site Destruction: *Whenever technologically feasible (see Principle 2 above), and socially acceptable (see Principle 1 above), destruction technologies should take place in situ, or as close to the point of origin as possible to minimize risky movement of waste and avoid transboundary movement.*

IV. Generator and Producer Responsibility / Polluter Pays Principle: *Generators of wastes and obsolete stockpiles should be held ultimately responsible, (financially, legally and morally), for its destruction.*

We hope this contribution will, if nothing else, allow experts the opportunity and moment to reflect on the establishment of policy within the parameters of the latest information and law in a comprehensive, holistic, pragmatic, yet principled way. With such policy, we believe that governments will be guided toward the best solutions to the difficult problem of chemical stockpiles and will be able to avoid creating more problems along the way.

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