**Working document for Annex IV.A**

**Filled by Dr. Maher Al-Jabari**

**Representative of the State of Palestine**

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**Decision BC-13/2: Mandate for the review of Annex IV**

1. Improve/update the description of disposal operations in Annex IV; and,
2. Improve environmental controls by including additional disposal operations that occur in practice or could occur in practice in Annex IV.

**How to use this document:** Please complete the table with your comments, including ‘problem statement’, ‘proposed change’ and ‘rationale’. Leave blank if no change is required. **Bold** **and** **underline** for additions and strikethrough (e.g., ~~strikethrough~~) for deletion of text.

**Submitting member/observer:**

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| **A** | **B** | **C** | **D** | **E** |
| **Annex IV.A** | **Problem statement** | **Proposed change** | **Rationale** | **General comments** |
| **Caption text**   1. OPERATIONS WHICH DO NOT LEAD TO THE POSSIBILITY OF RESOURCE RECOVERY, RECYCLING, RECLAMATION, DIRECT RE-USE OR ALTERNATIVE USES | **"DIRECT RE-USE" contradicts the definition of waste which is based on the phrase " disposed of"…**  **In fact we may delete this whole introductory part after the full modification as below….** | **Delete**  **"Direct RE-USE"**  **Better to Label them simply as**  **Final Disposal Operations** | **If an abject has a direct USE it is not a waste. It shall not be "disposed of", but has a value.**  **"Final Disposal" implies that they do not lead to……** | **ALTERNATIVE USES needs clarification and then decide to keep or eliminate**  **RECLAMATION appears only in this annex – no reference to it in the whole convention…** |
| **Introductory text**  Section A encompasses all such disposal operations which occur in practice. | **The test gives only one criterion "in practice".**  **This applies to both "bad" and "environmentally sound" operations.** | **Add "and environmentally sound" at the end, after practice.**  **See also general comment here**  **i.e. or "could occur in practice"** | **The current list includes operations that are not "environmentally sound"**  **The change is required in order to emphasis the acceptance of only "environmentally sound" so that bad disposal operations shall be removed from this list (as below), or moved/ labeled….** | **In (ii) of the mandate, there is an additional criterion "could occur in practice " .**  **This must be taken into account in this introductory part.** |
| **General comments** | | | | |
| 1. ***Is it possible to add footnote to this annex stating the definitions these operations?***   ***"* *RESOURCE RECOVERY, RECYCLING, RECLAMATION, OR ALTERNATIVE USES" if they are kept in the description….*** | | | | |
| 1. ***I emphasize the recommendation of distinguishing between " disposal" and " recovery" operation as per Tables 23-Nov-2017*** | | | | |
| 1. ***I agree with the recommendation of restating as "* FINAL DISPOSAL OPERATIONS" *without additional text, as per Tables 23-Nov-2017*** | | | | |
| 1. ***If the annex will continue listing disposal operations that are not environmentally sound (for the purpose of reporting, based on current practice), then section A must distinguish between environmentally sound and non-sound (bad) operation… see below.*** | | | | |
| 1. ***I emphasize on the recommendation of reversing "" the sequence of the sections IV-A and IV-B, so that “final disposal operation” comes after “recovery operation, as per Tables 23-Nov-2017*** | | | | |

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| **A** | | **B** | **C** | **D** | **E** |
| Disposal operation | | **Problem statement** | **Proposed change** | **Rationale** | **General comments** |
| **D1** | Deposit into or onto land, (e.g., landfill, etc.) | **This description is open to any land deposit operation ….**  **The term "etc" is not suitable: It must specify other "examples", if available, and state them explicitly.**  **See general comments for other parts.** | **Refreeze as "environmentally engineering landfill".** | **Landfill is given as an example. Only environmentally engineering landfill is acceptable for Hazardous waste disposal.** | **Focus here on "environmentally sound manner"**  **Solve the overlap with D5** |
| **D2** | Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.) | **These types of treatments "may" create problems to ground water by penetration/ "infiltration" process** | **Consider to eliminate this operation since it does not seem environmentally sound** | **Contamination of soil and ground water is possible with this operation. It may have impacts on agriculture and water quality (e.g. adsorption onto soil particles is a reversible process so that contaminants may desorb back with water infiltration through soil upon rain…** | **If this operation is not eliminated, an additional text is required for controlling the possible pollution of ground water (and agriculture).** |
| **D3** | Deep injection, (e.g., injection of pumpable discards into wells, salt domes of naturally occurring repositories, etc.) | **Possible impact on water quality/ ground water, unless these locations are engineered to receive such hazardous waste.** | **Add "into environmentally engineered locations" after the word injection.** | **A need for controlling possible impacts on water quality.** | **Possible reactions of contaminants with salts…** |
| **D4** | Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.) | **This operation pollutes surface water and has impacts on humans and animals…** | **Eliminate**  **or label bad operation** | **A need for controlling possible impacts on humans and animals…** | ***Focus here on "environmentally sound manner"***  ***Review the acceptance of the concept of "Dilution"***  ***And solve the overlaps with D6 and D7*** |
| **D5** | Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.) | **After the proposed modifications. This operation becomes identical to D1.** | **Eliminate** | **Remove duplications** | ***Must solve the overlaps with D1* regardless of modifying the description of D1** |
| **D6** | Release into a water body except seas/oceans | **See comments on D4:**  **This operation pollutes water bodies.** | **Eliminate**  **or label bad operation** | **A need for controlling possible impacts on humans and animals…** | **Review the acceptance of the concept of "Dilution" for minimizing the impact of a waste…**  ***And solve the overlaps with D4 and D7*** |
| **D7** | Release into seas/oceans including sea-bed insertion | **This operation pollutes seas and has impacts on fish and sea biodiversity…** | **Eliminate**  **or label bad operation** |  | **Review the acceptance of the concept of "Dilution"**  ***And solve the overlaps with D4 and D6*** |
| **D8** | Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A | **This is a treatment process not a final disposal.**  **It results in "final compounds" but does not state how to deal with them** | **Move from this section…. To a new proposed section.. see below** | **Review the inclusion of "treatment" operation within disposal operations.** | **The focus may be on the "disposal" of the final compound from treatment.** |
| **D9** | Physico chemical treatment not specified elsewhere in this  Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A, (e.g., evaporation, drying, calcination, neutralization, precipitation, etc.) | **This is a treatment process not final disposal.** | **Move from this section…. To a new proposed section.. see below** | **Review the inclusion of "treatment" operation within disposal operations.** | ***And solve the overlaps with D13*** |
| **D10** | Incineration on land | **This is a treatment process not final disposal.** | **Move from this section…. To a new proposed section.. see below** | **Does not specify: "how to deal with resulting materials of incineration" and the operation conditions…. to ensure it as environmentally sound.** | **Clarify overlap with D11** |
| **D11** | Incineration at sea | **This is a treatment process not final disposal.** | **Move from this section…. To a new proposed section.. see below** | **Incineration is incineration**  **Clarify why distinguish between sea and land operation?** | **Clarify overlap with D10** |
| **D12** | Permanent storage (e.g., emplacement of containers in a mine, etc.) | **Does not overlap with D3?** | **Move from this section….** | **Review the inclusion of "handling" operation within disposal operations.** |  |
| **D13** | Blending or mixing prior to submission to any of the operations in Section A | **This is a treatment process not final disposal.**  **It is a D8-operation / Physico chemical treatment** | **Move from this section…. To a new proposed section.. see below** | **Review the inclusion of "treatment" operation within disposal operations.** | ***And solve the overlaps with D9*** |
| **D14** | Repackaging prior to submission to any of the operations in Section A | **This is a "handling operation" not final disposal.** | **Move from this section…. To a new proposed section.. see below** |  |  |
| **D15** | Storage pending any of the operations in Section A | **This is a "handling operation" not final disposal.** | **Move from this section…. To a new proposed section.. see below** |  |  |
| **General comments** | | | | | |
| 1. ***Distinguish between " treatment" and " disposal" (and recovery-in section B) - see comment 2 below.*** | | | | | |
| 1. ***Consider adding new section: Handling and Treatment operation that results in compounds, mixtures and residues that must be disposed of by operations in section A. This is the "* new proposed section" appeared in Proposed Change column above.** 2. ***Then move related D's operation to such new section.*** | | | | | |
| 1. ***In D1-D5, D9 and D12: "the term " etc " is not suitable. It must specify other "examples", if available, and state them explicitly.*** | | | | | |
| 1. ***This review process must consider "* Y18 Residues arising from industrial waste disposal operations"** | | | | | |
| 1. ***This review process must consider* "H13 Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above."** | | | | | |
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| **A** | | **B** | **C** |
| **New D operation** | | **Rationale** | **General comments** |
| **1** | **Transforming waste by reaction, solidification, forming … processes resulting in stable materials, which do not deteriorate, or leach back hazardous content.** | **These operations could occur in practice ….** | **New operations may evolve from research e.g. Aggregating, flocculating waste particulate matters using binding materials that stabilize the obtained aggregates and make them suitable for disposal in normal landfills without leaching problems.** |
| **2** | **Research level operations – potential disposal or treatment operations** |  |  |
| **3** | **Emphasizing recommended new operations *as per Tables 23-Nov-2017*, such as autoclaving"** |  |  |

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| **Overarching comments** |
| 1. **Divide this annex into 3 sections in the following sequence: A-"** **recovery operations", B-" handling and treatment operations " and C- "Final disposal operations"** |
| 1. **Focus on environmentally sound operations** |
| 1. **Eliminate overlaps of D-operations with R-operations in section B** |
| 1. **The annex cannot be renamed without considering Article 2 / 4 “Disposal” means any operation specified in Annex IV to this Convention;**   **In future revisions, this aricle may be revisited.** |
| 1. **consider to re-structure the annex into 3 sections with new sequences as follows**   **A – Recovery Operations that result in useful (non-waste) materials that have a value.**  **B – Handling and treatment operations that results in waste (non-useful materials) for final disposal (part of the current D operations and new proposed ones (like importing waste for subsequent exporting as New Zealand practice…).**  **C – Final Disposal Operations for Disposal types among the current D- Operations**  **(Note here: if bad environmental disposal operations will remain in the annex (for reporting of existing bad practices), this section must label each operation as bad (coded B, for example) or environmentally sound (coded E, for example) operations. This is accomplished by adding as new column in the disposal operation list and possibly within the code DE… or DB….** |
| 1. **This review task must be Kept open until we review wastes of annex I, since new waste may require new operations e.g. nanomaterials** |
| 1. **The Arabic translation is not technically valid e.g.**   **landfill is a loation (مكب النفايات), while it is translated into a word meaning an operation (حشو الأرض ).**  **Land treatment (المعالجة الأرضية), while it is translated into a word meaning a treatment for the land - not by the land (معالجة الأرض ).**  **Specially engineered landfill is totally wrong….** |