



Waste in humanitarian Operations:
Reduction and Minimisation

WORM FINAL EVENT



Tuesday, 4 November 2025



9.00-12.00 EET
(8.00-11.00 CET)



Hanken School of Economics
Assembly Hall
Arkadiankatu 22, 00100 Helsinki



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Waste in humanitarian Operations:
Reduction and Minimisation

Introduction to the project

Project PI Prof Gyöngyi Kovács



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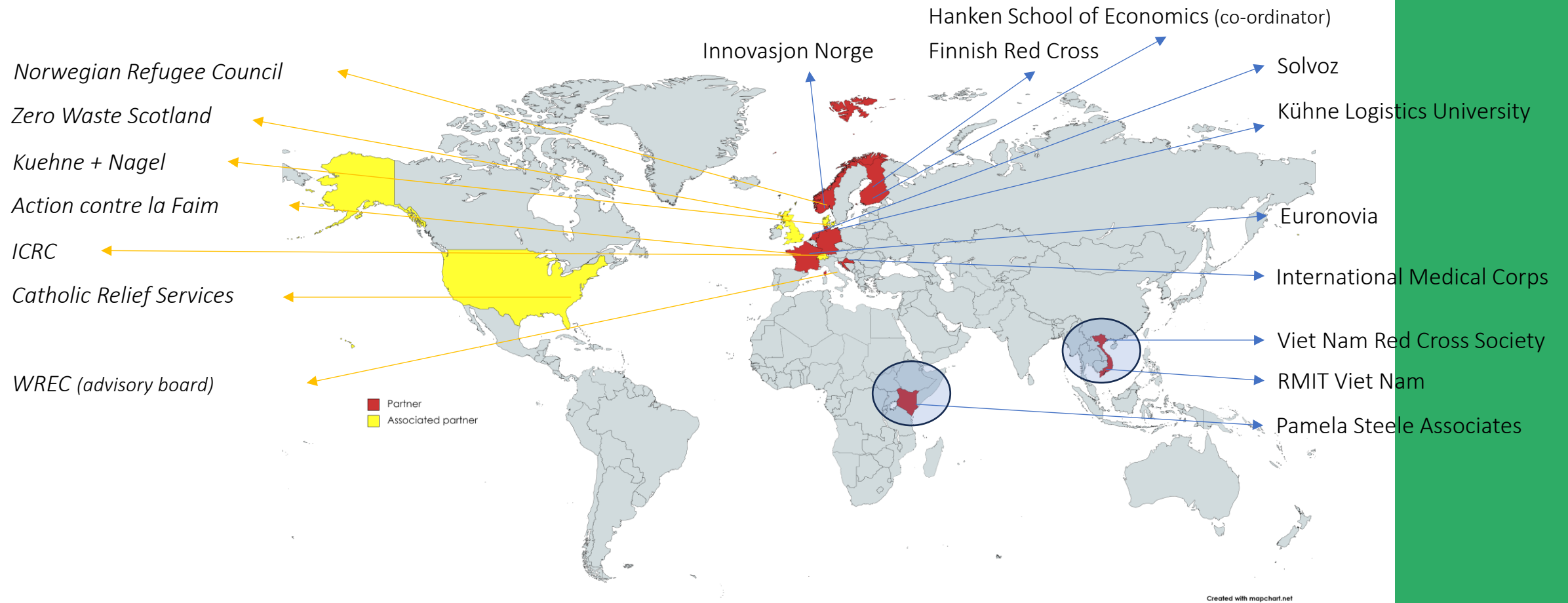
WORM Objective

- Waste in humanitarian Operations: Reduction and Minimisation (WORM)'s overall objective is designing guidelines and support actions for circular economy in the humanitarian sector.
- WORM focuses on two selected settings: field hospital deployments, and humanitarian livelihood programmes with a waste picking component. Across these settings, the project focuses on several cross-cutting focus areas:
 - the integration of **bio-based technological innovation solutions** in the humanitarian context,
 - using **procurement** as a gatekeeper for waste avoidance, and gateway to integrate innovative solutions,
 - improvements in **waste management**, and the use of less polluting **waste treatment methods**,
 - a specific focus on the **sustainable livelihoods of waste pickers**, and
 - **policy development, advocacy** and a heightened local awareness of improved waste management in the relevant local contexts.

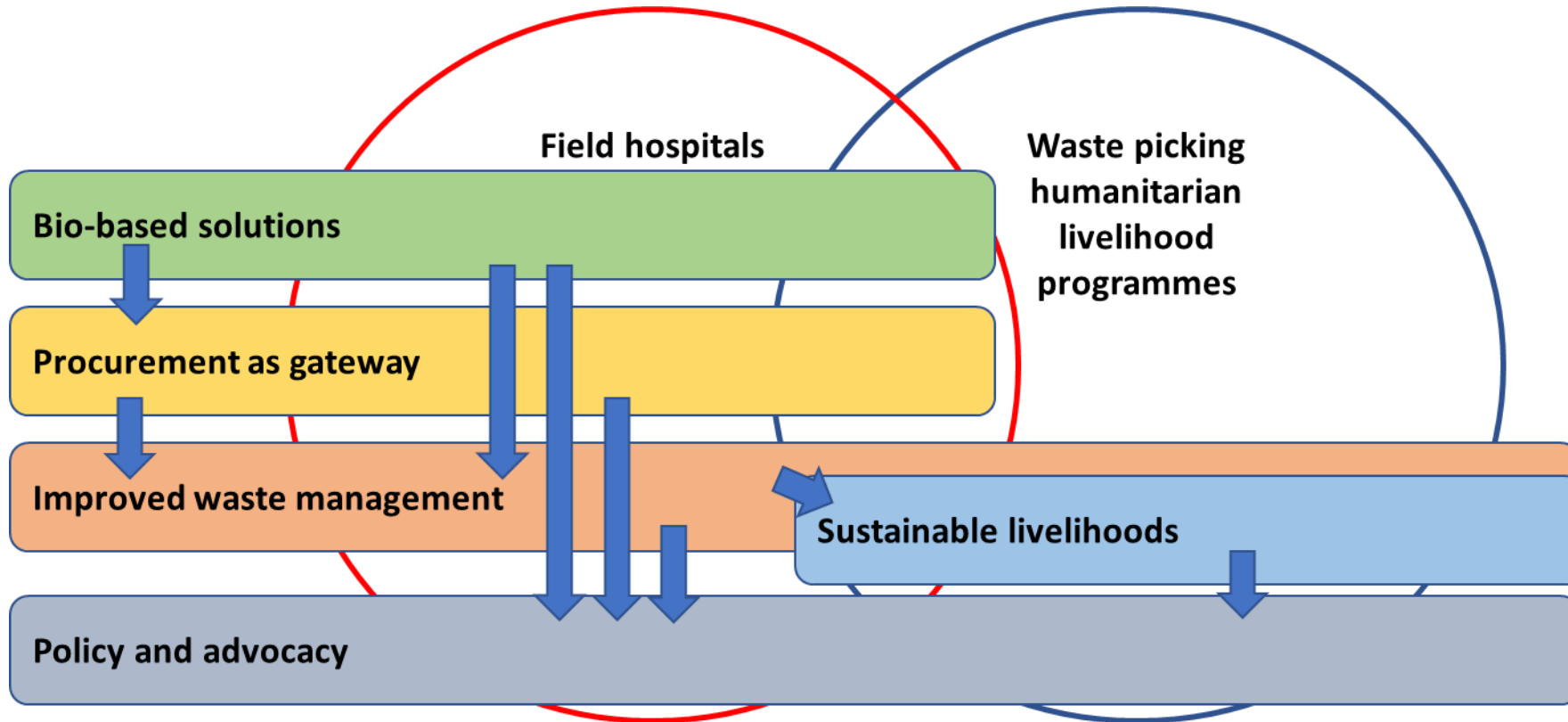


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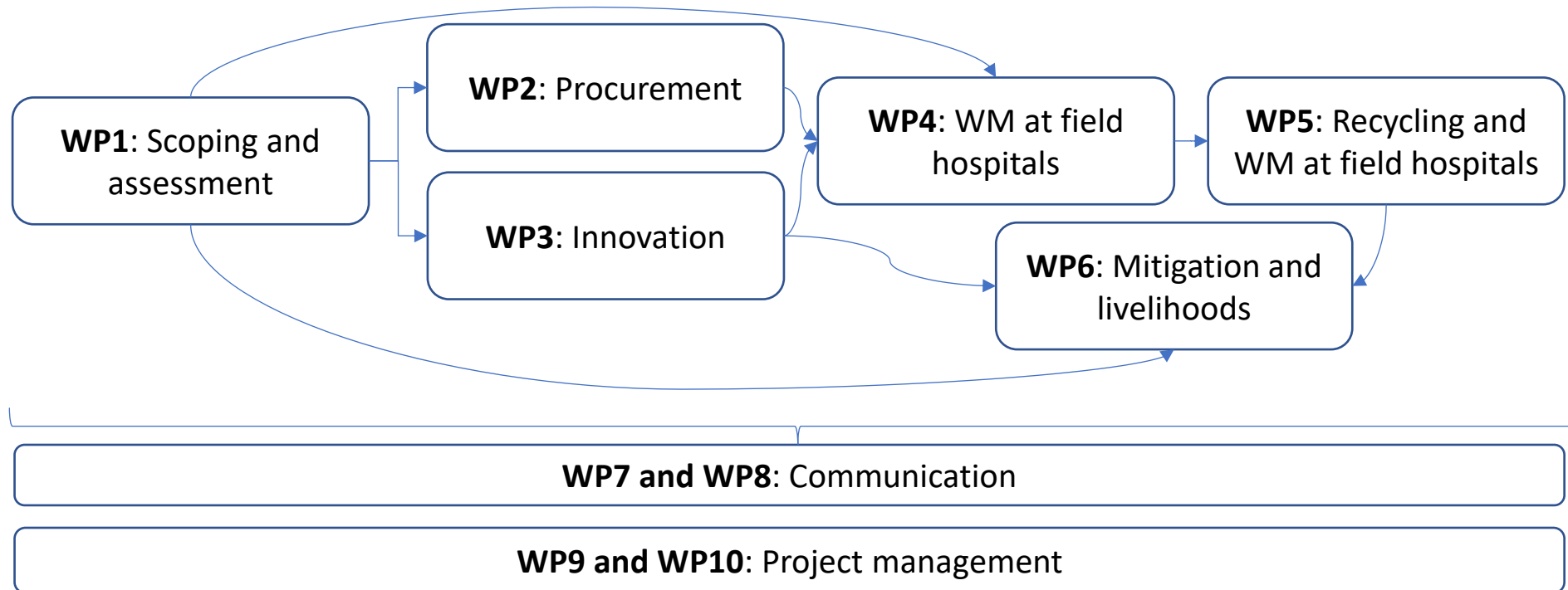
WORM Consortium



WORM focus areas



WORM structure



Outcomes

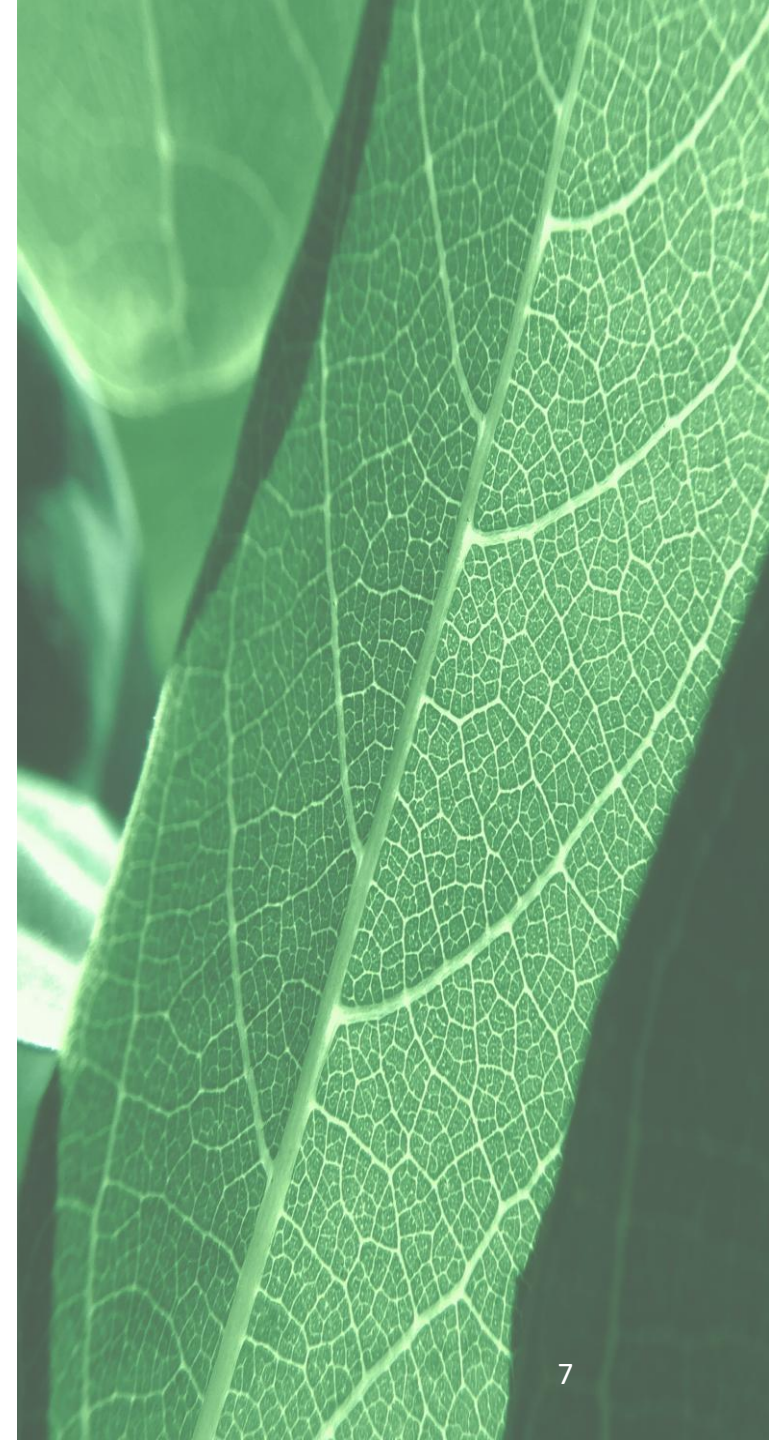
Outcome 1: Identification of sustainable bio-based solutions of applicable performance under humanitarian aid contexts, addressing the technical challenges posed by diverse environmental, social, and economic conditions.

Outcome 2: Improved way to address waste management and waste-related challenges in humanitarian aid contexts.

Outcome 3: Significant reduction/minimisation of waste (e.g., plastic or fibres waste) in the environment.



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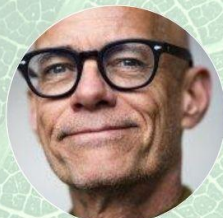


Waste in humanitarian Operations:
Reduction and Minimisation

WORM FINAL EVENT

Agenda *

9:00-9:15	Welcome
9:15-9:30	Two years of WORM: an overview of our goals, activities and results
9:30-9:55	Keynote: "Responding to global disasters, is there a need for field hospitals?" - Johan von Schreeb (Karolinska Institutet)
9:55-10:15	Project results: Standard operating procedures for emergency medical teams and field hospitals
10:15-10:30	Break
10:30-10:50	Project results: Causal loops diagrams of tradeoffs of bio-based materials
10:50-11:15	Keynote: "New ideas for Waste Management in Emergency Medical Teams" - Syed Yasir Ahmad (International Medical Corps)
11:15-11:45	Panel discussion: Field-based solutions for managing medical waste
11:45-12:00	Q&A



Johan von Schreeb
Prof. of Global Disaster
Medicine



Syed Yasir Ahmad
Global WASH Advisor



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* Preliminary agenda, subject to change

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WP6 – Socio-economic feasibility study

November 4th, 2025



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Objectives of the WP6

- Evaluate socio-economic and governance aspects of identified solutions
- Assess feasibility in real-life contexts (South Sudan and DRC)
- Provide insights on technical, economic, and operational dimensions

10 Bio-Based Solutions

Products

- ✓ Mycelium protective material (equipment protection)
- ✓ Adhesive tape (scotch tape)
- ✓ Biodegradable laminated film
- ✓ PLA (polylactic acid) bottle
- ✓ Compostable bag for ready-to-use therapeutic foods (plumpynut)
- ✓ Bag made from renewable resources
- ✓ Sanitary pads
- ✓ Fishing nets / mosquito nets

Technologies

- ✓ Black soldier fly (BSF)
- ✓ Biogas technology

Products



Products



Technology: Black soldier fly (BSF)



Presentation name (change in slide master)



Technology: Biogas



Presentation name (change in slide master)



Stakeholders group interviewed

- Humanitarian stakeholders: 3 national NGOs, 5 INGOs and 4 clusters
- State and government stakeholders: 5 respondents
- Academic and research community: 4 respondents
- Community: 2 respondents
- Private sector: 3 respondents

Latest findings from the community engagement

- Strong interest in solutions addressing major waste fractions (plastic bottles, PE bags)
- Biogas and BSF technologies appreciated by rural communities (mainly farmers)
- Growing interest from private sector

Latest findings from the community engagement

- Both **technologies already implemented locally**, though facing challenges
- **Product preferences vary by cluster:**
 - WASH: sanitary pads
 - Food security: bottles, sachets, fishing net; would appreciate to have a solution for PP bags used for food distribution.
 - Logistics: laminating films, tape, mycelium protective material
 - Health: mosquito nets, bottles
 - Nutrition Cluster: Compostable pouch (sachets) for RUTF



BIO4HUMAN

Thank You!

Presenter: Julien Lugwarha



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Responding to global disaster, is there a need for field hospitals?

Johan von Schreeb MD, PhD General surgeon,
Professor Global Disaster Medicine, Center for Research on Health
Care in Disasters. Director Centre for Health Crises
Department of Global Public Health



Karolinska Institutet

was founded by King Karl XIII in 1810 as an "academy for the training of skilled army surgeons" after one in three soldiers wounded in the Finnish War against Russia died in the field hospitals. The medical skills of the army barber-surgeons were manifestly inadequate, so Sweden must train surgeons in order to better prepare the country for future wars.

Centre for Health Crises

The universities have an important role to support society before and during a health crisis

- Gather **expertise** at secondments to agencies
- Operational **Research**
- **Education and training**, building capacity for the future
- **Policy**, linkage to professional practice







Melissa





Disasters triggers reflexes: SEND

- Field hospitals
- Trauma surgeons
- Medicines



What is a disaster?

“A serious disruption of the functioning of a community or a society involving widespread, human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources”

WHO's Glossary of Health Emergency and Disaster Risk Management Terminology



HAZARD



VULNERABILITY



Natural hazards, health effects

Direct

<i>Effect</i>	<i>Earthquakes</i>	<i>Strong Winds</i>	<i>Tsunamis and Flash floods</i>	<i>Ordinary Floods</i>	<i>Landslides</i>	<i>Volcanic and Lava Activity</i>
Loss of lives	High	Low	High	Low	High	High
Severe injuries requiring complex treatment	High	Moderate	Low	Low	Low	Low
Major risk of communicable diseases	Potential risk following all significant phenomena (Likelihood increases with crowding and the degradation of sanitary conditions)					
Damage to health facilities	Severe (structure and equipment)	Severe	Severe but localized	Severe (equipment only)	Severe but localized	Severe (structure and equipment)
Damage to water supply systems	Severe	Light	Severe	Light	Severe but localized	Severe
Food scarcity	Infrequent (generally caused by economic or logistical factors)		Common	Common	Infrequent	Infrequent
Large migrations	Infrequent (common in severely affected urban areas)		Common (Generally limited)			

Indirect

Man-made hazards (conflicts), health effects

- Direct effects +
 - Trauma (bombing, bullet injury)
 - Mental health problems
- Indirect effects +++++
 - Due to displacement Public health related
 - Due to destruction of health facilities
 - Indirect 3–15 times higher

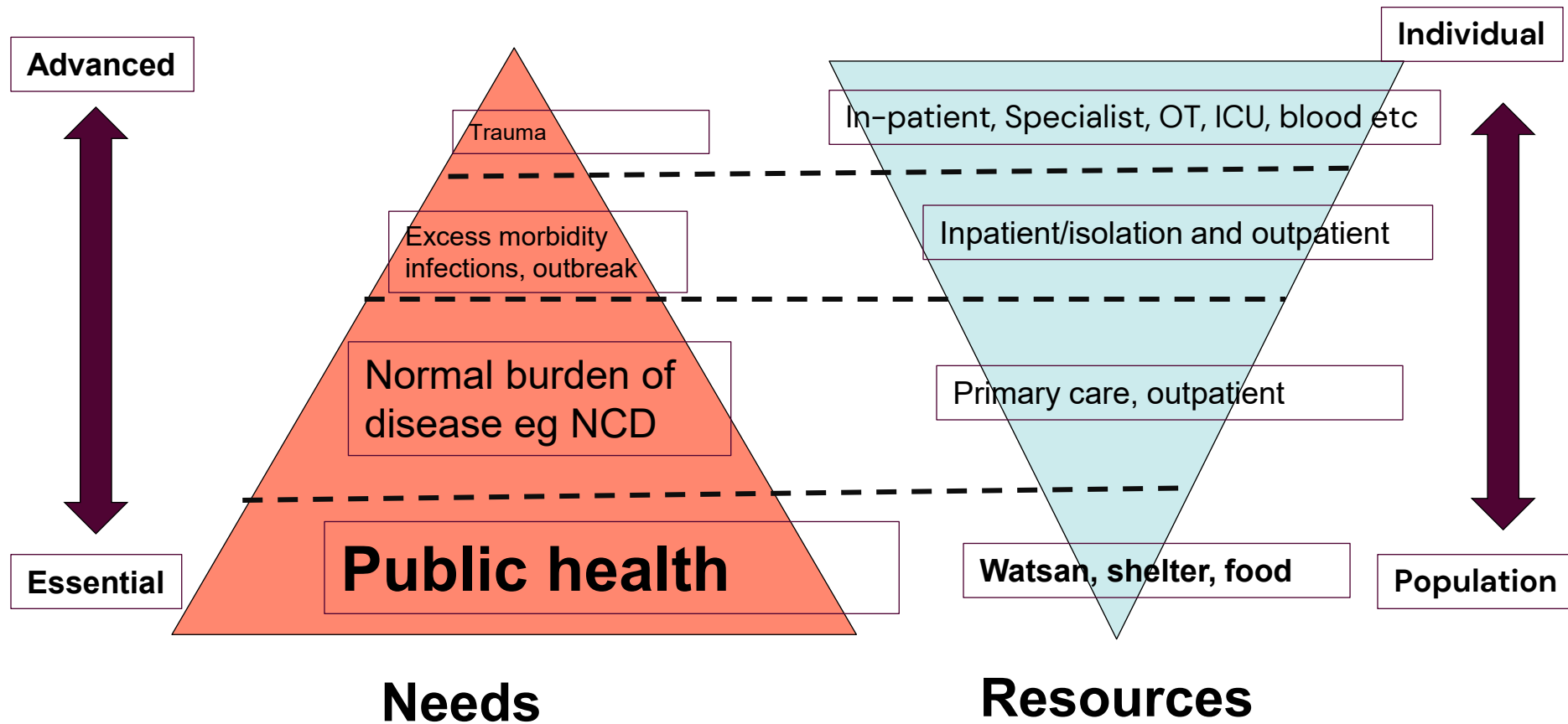


Mg och Ml



Ton och Cubic metres

Health needs in disasters and resources required





Emergency Medical Teams EMT

“Global 112”

Following the “shame” after the 2010 Haiti earthquake

Good intentions! not enough!
Improve health care (surgical care)
following disasters

Emergency Medical Teams initiative

WHO resolution

“Surge function” to mobilize and
coordinate EMTs following disasters
and outbreaks

Support function to affected
countries

Quality, training, standards,

International and National EMTs



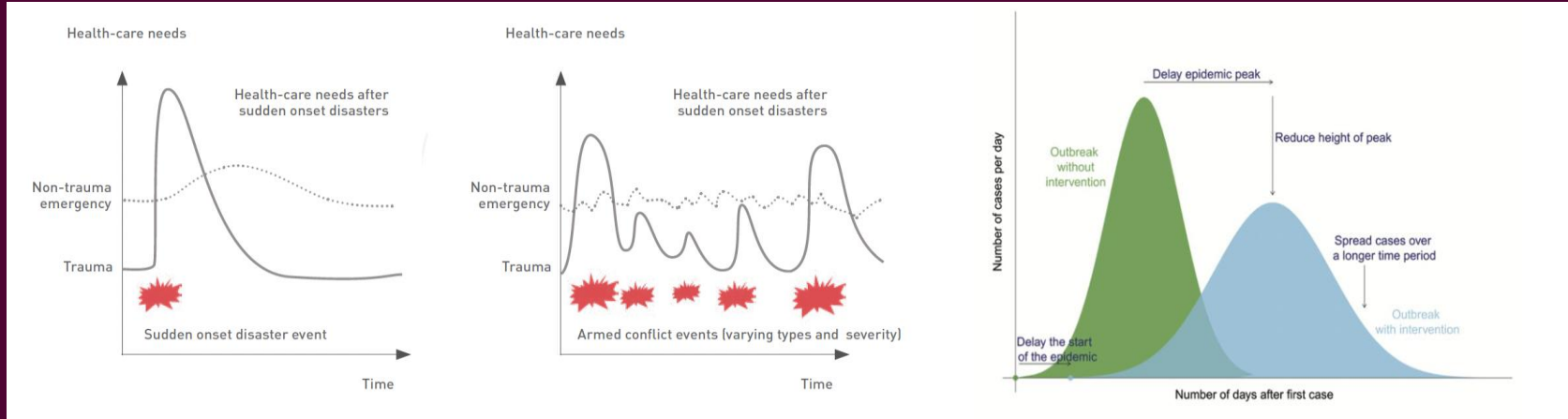
EMT Classification System

Type	Description	Capacity
1 Mobile	Mobile outpatient teams Remote area access teams for the smallest communities	>50 outpatients a day
1 Fixed	Outpatient facilities +/- tented structure	>100 outpatients a day
2	Inpatient facilities with surgery	>100 outpatients and 20 inpatients 7 major or 15 minor surgeries daily
3	Referral level care, inpatient facilities, surgery and high dependency	>100 outpatients and 40 inpatients Including 4-6 intensive care beds 15 major of 30 minor surgeries daily
Specialist Cell (e.g. rehab, surgical, paediatric, infectious disease etc.)	Teams that can join national facilities or EMTs to provide supplementary specialist care services	Any direct patient care related service can be termed a specialist cell EMT when given in emergency response by international providers/clinicians

**120 EMT in process for WHO classification,
53 are classified (Governmental, NGOs,
Company, Military)**



Phases are dependant of emergency type



Natural hazards

Specialized Care Team EMBEDDED

Specialized Care Team COUPLED

Specialized Care Team SELF - SUSTAINED

Man-made crises

Specialized Care Team EMBEDDED

Specialized Care Team COUPLED

Specialized Care Team SELF - SUSTAINED

Public health emergencies

Specialized Care Team EMBEDDED

Specialized Care Team COUPLED

Specialized Care Team SELF - SUSTAINED

Turkey 2023 earthquake

Some 50 000 injured were evacuated with helicopters, ambulances and cars within 48 hours



TÜRKİYE UMKE DEFNE
Type 2

TÜRKİYE UMKE İSKENDERUN
Type 2

TÜRKİYE UMKE SAMANDAG
Type 2

TÜRKİYE UMKE HATAY CITY
Type 2

HUMANITY FIRST
Type 2

UAE TEAM 1
Type 1 Fixed

SAMARITAN'S PURSE
Type 3

GERMAN MILITARY TEAM
Type 2

REGIONE PIEMONTE (ITA)
Type 2

START SPAIN
Type 2

SWISS HUMANITARIAN AID
SCT/RMNCH

BFAST BELGIUM
Type 2

INDIA MILITARY TEAM
Type 2

INDONESIA MUSAR TEAM
Type 2

QATAR
Type 2

UZBEKISTAN
Type 1 Fixed

MONGOLIA
Type 1 Fixed

LYBIA

TOTAL N° EMTs DEPLOYED **38**

22 MARCH 2023
EARTHQUAKE
EMTCC IN TURKIYE



UK-EMT (CIV-MIL)
Type 2

AZERBAIJAN TEAM
Type 2

ISRAEL DEFENCE FORCES TEAM
Type 3

JORDAN ROYAL MEDICAL SERVICES TEAM
Type 1 Fixed

POLAND MIL TEAM
Type 1 Fixed

EMERCOM
Type 1 Fixed

HUMEDICA
Type 1 Fixed

KYRGYZSTAN
Type 2

CUBA

JAPAN DISASTER RELIEF TEAM (JDR/JICA)
SST/IM
CONTINUING TO SUPPORT REMOTELY

HUMEDICA
SST/IM

MALASIA EMT (2 TEAMS)
Type 2

ESCRIM FRANCE
Type 2

IRAN EMT
Type 2

PHILIPPINE EMERGENCY MEDICAL ASSISTANCE TEAM
Type 1 Fixed

UAE TEAM 2
Type 2

JAPAN DISASTER RELIEF TEAM (JDR/JICA)
Type 2

PEACE WINDS JAPAN
Type 1 Fixed

IRAQ
Type 1 Fixed

TMAT
Type 1 Fixed



TYPE 1
Mobile



TYPE 1
Fixed



TYPE 2
Inpatient Surgical
Emergency Care



TYPE 3
Inpatient
Referral Care



Specialized
Care Teams



Specialized
Support Teams



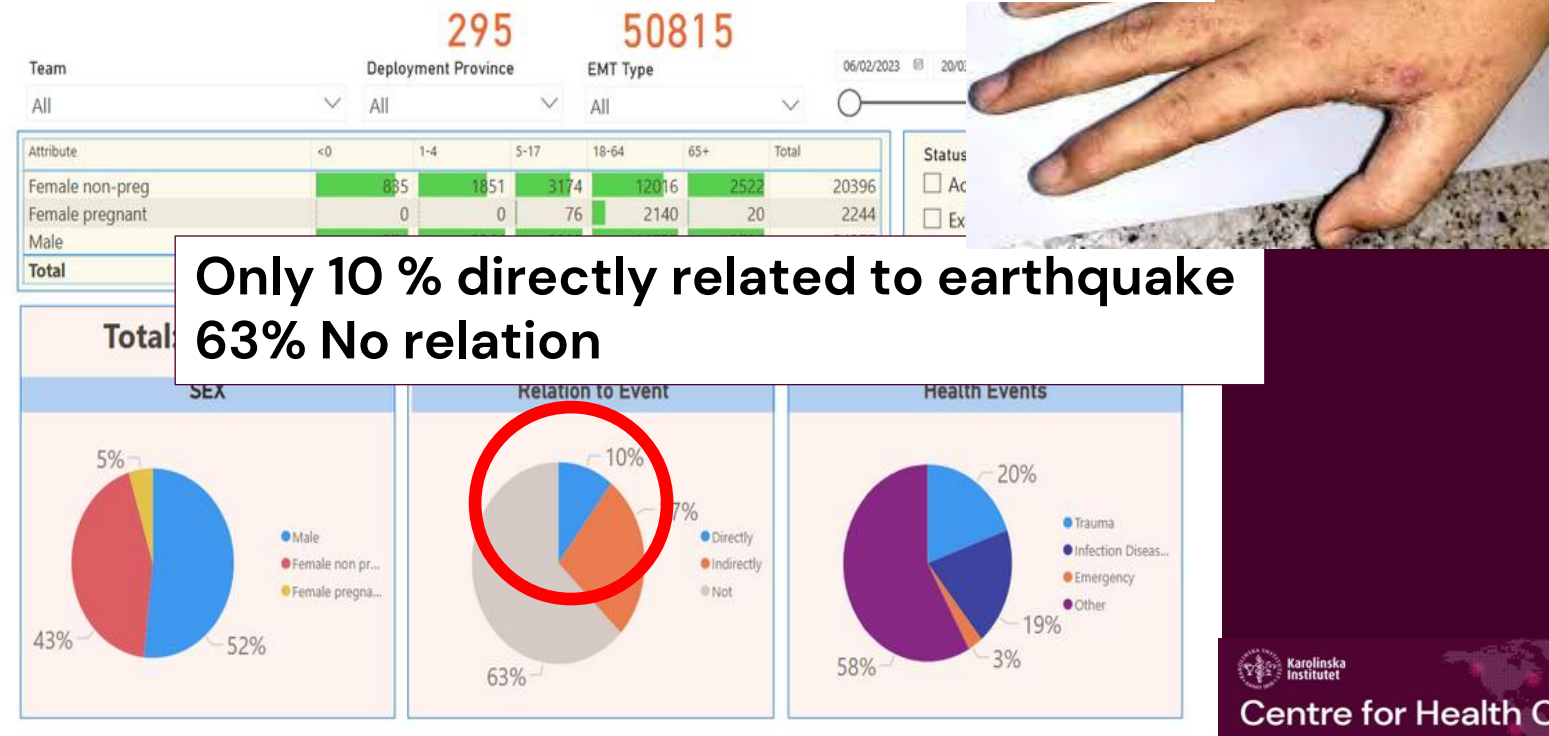
EXITED



World Health Organization
REGIONAL OFFICE FOR Europe

Very limited need for field hospitals (WHO MDS Turkey)

Scabies, ARI, diarrhoea and NCD main diagnosis



Gazianteps shopping centre (epicentre) one week after earthquake





Emergency Medical Teams (EMTs) in Gaza health response

 1 Jan 2024 - 2 Oct 2025



Since October 2023, people in Gaza have endured relentless and escalating conflict, leading to massive loss of life, countless injuries, and repeated waves of displacement. Civilian infrastructure - including hospitals, primary health centers, and other health facilities - has been severely damaged or destroyed, leaving the majority out of service.

At the same time, severe shortages of medicines, medical supplies, equipment, electricity, water, fuel, and communications, combined with the lack of safe access to facilities, have crippled Gaza's health system, cutting people off from essential primary, secondary, and specialized care.

As a critical component of the health response, the Ministry of Health activated the international Emergency Medical Team (EMT) initiative in December 2023, to reinforce the capacity of Gaza's health system through the deployment of medical teams. WHO responded swiftly by establishing the EMT Coordination Cell (EMTCC) in both Gaza and Cairo, providing operational coordination, technical guidance, and quality assurance, while also supporting access and registration processes for deployed medical teams, and with donations of critical medical supplies.

Despite these efforts, EMT operations continue to face severe access constraints, including denials and delays that hinder partner organizations and their staff from reaching those in urgent need.

Over the past 22 months, 28 EMT partner organizations have deployed 54 teams across Gaza, delivering essential health services through the establishment of 5 Type-2 field hospitals, 15 Type-1 clinics, including 3 trauma stabilization points (TSPs), and 34 Specialized Care Teams (SCTs). Since January 2024, deployed EMTs have supported a wide range of public health services, including emergency and trauma care, specialized surgery, primary health care, sexual and reproductive health, pediatrics and malnutrition management, as well as nephrology and hemodialysis services.

Under the guidance of the EMTCC, two National EMTs have been relaunched during this response, providing a significant contribution to the overall health service delivery across Gaza. Their engagement has strengthened localization of resources and enabled technical skill transfer through structured mentorship programmes jointly implemented with WHO and international EMT partners.

EMTs have operated with agility and a strong commitment to quality, delivering rapid responses to urgent health needs across Gaza. They have stood in solidarity with local health workers, ensuring their sustained presence throughout the ongoing crisis.

To maintain and scale up their impact, the following must be ensured:

Services provided by EMTs since January 2024



3 512 808
General medical consultations



50 907
Emergency surgeries



179 241
Critical trauma patients treated



239 967
Patients treated for noncommunicable diseases



23 987
Referrals



8067
Patients treated for severe acute malnutrition



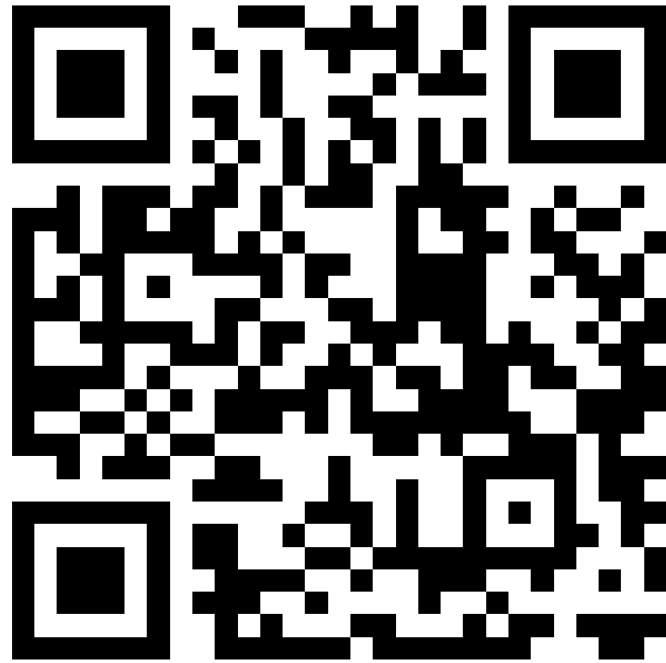
12 056
Births supported

So is there a needs for field hospitals?

- Depends on context (vulnerability + Hazard)
- Adapt to needs (Type, length of stay, etc)
- Must be multidisciplinary, offer more than trauma care
- Integrate into national health system
- Water and sanitation and waste management essential!



Thank you!



Johan.von.Schreeb@ki.se

1.

Plug and Play Framework for Humanitarian Organisations



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Objectives of the plug and play framework

- Enhance decision-making support for HOs selection of waste treatment technologies
- Bridging the gap between Humanitarian Organisations (HOs) and local waste service providers



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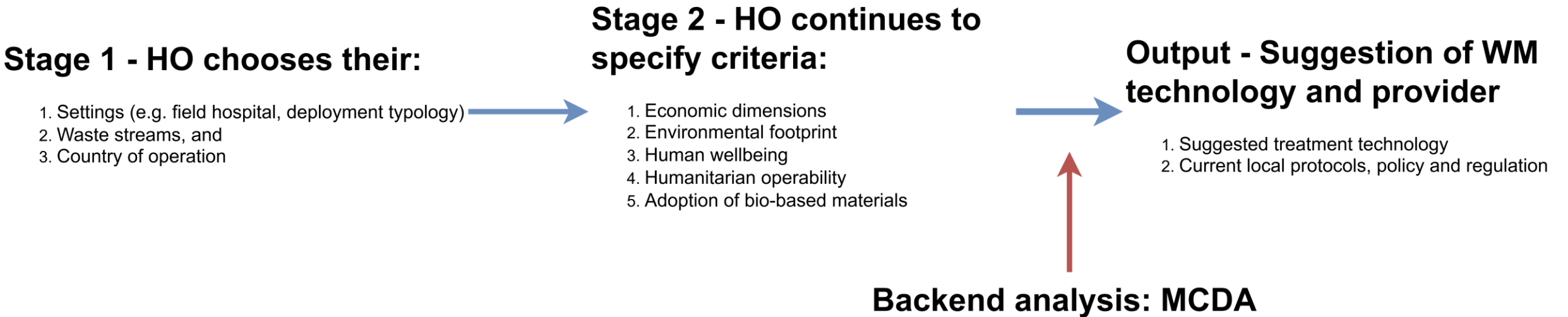
Context setting

- Waste generation and treatment within field hospital deployments is influenced by many factors including:
 - Internal institutional practices
 - External host-country requirements
- Additional considerations for field hospital settings, for example, conflict and/or disaster-affected regions
 - This will impact considerations for existing basic and waste management infrastructure





Process flow for the Plug and Play



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Multi-criteria Decision Analysis (MCDA)

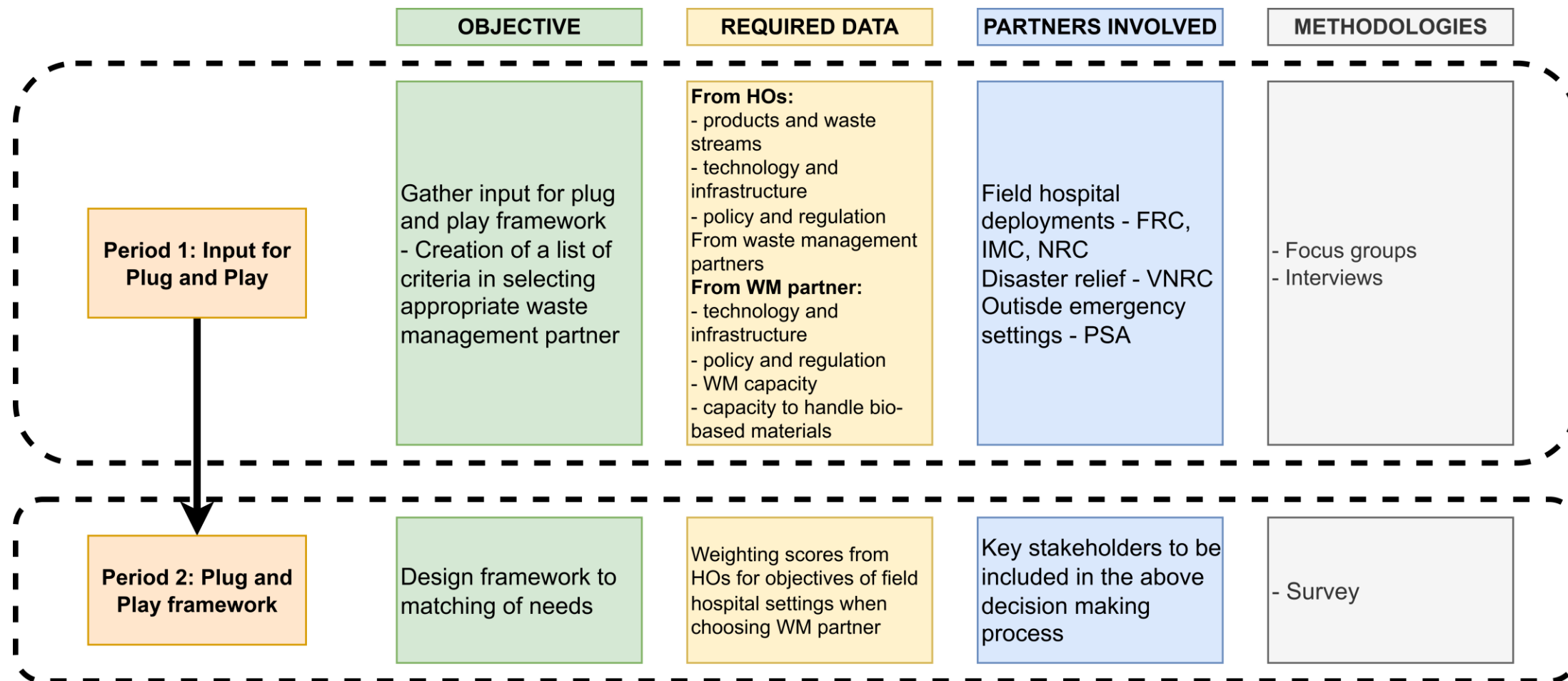
- Step 1: Problem definition and criteria identification
- Step 2: Data collection and preprocessing
- Step 3: Data analysis method
- Step 4: Model development
- Step 5: Sensitivity analysis
- Step 6: Visualisation and reporting
- Step 7: Plug and Play implementation



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Data collection for Plug and Play



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Findings

- Still a gap between HO operations and the coupling between local waste management service providers
- Key concern is still operability of treatment technologies in humanitarian settings



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WP5 Standard operating procedures

IMC & Hanken



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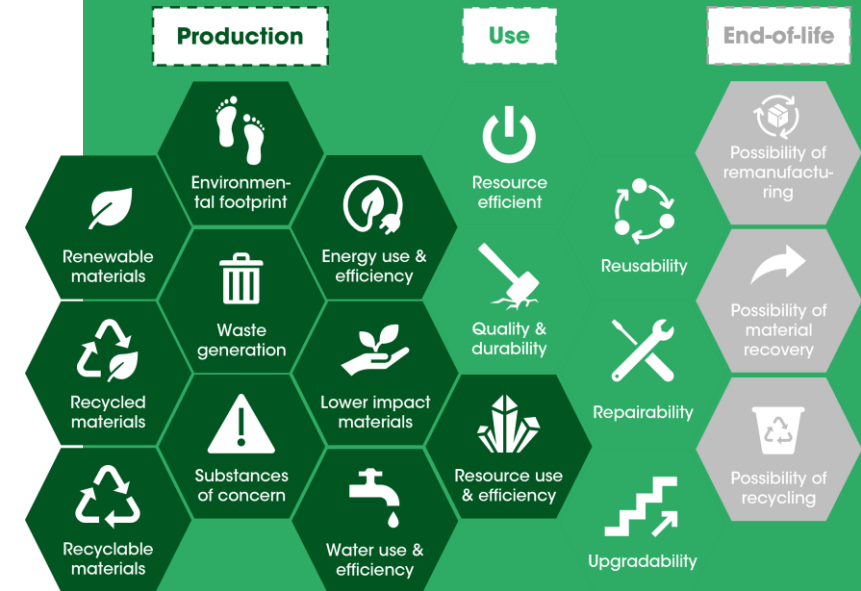
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Context

Operational backbone

- Translating research and innovation into field implementation
- Task 5.1: SOP for product use, re-use, recycling, and reverse logistics in field hospital settings
- Task 5.2: SOP for Handover of Field Hospitals to local partners in Humanitarian settings.
- Together, they provide the ‘how-to’ guidance for implementing circular, sustainable, and responsible practices across EMT and Field Hospital operations.

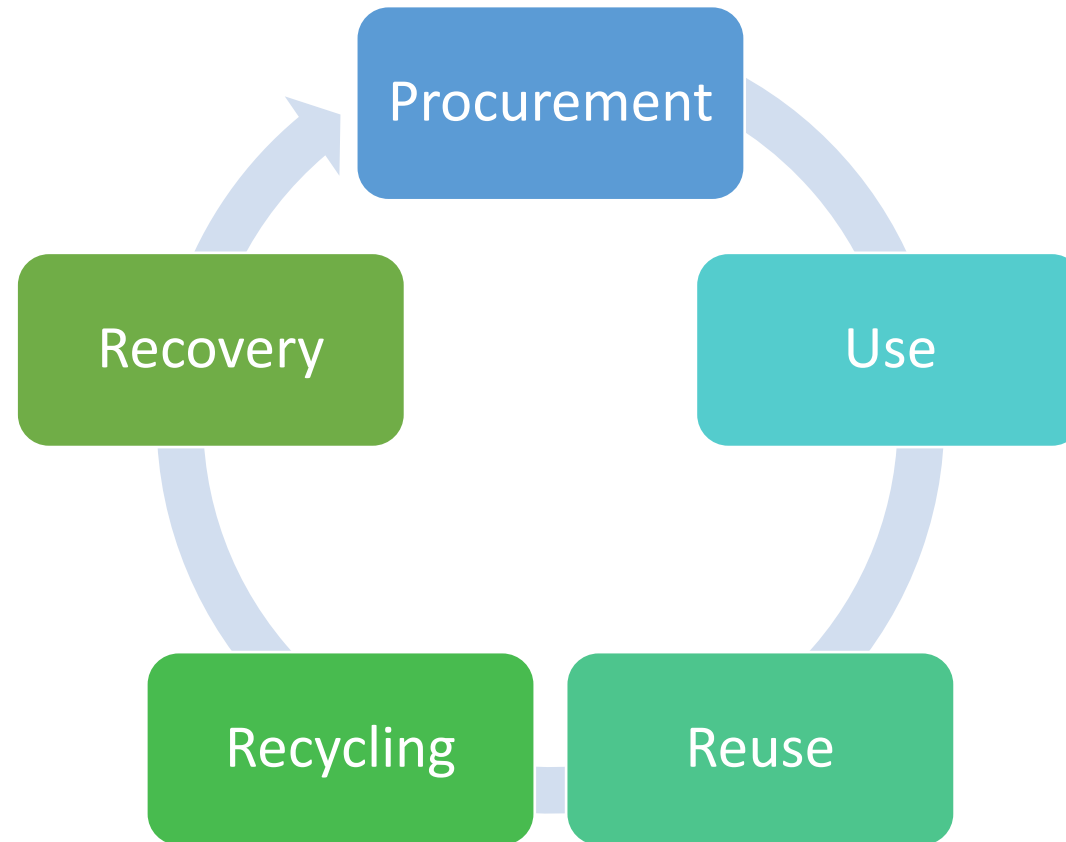
- Plug & play framework
- Innovative and circular business models
- Procurement guidelines



Overview and purpose

Task 5.1

Complete product lifecycle integrating sustainability and circular economy principles into field hospital operations.



Overview and purpose

Task 5.2

Handover framework

Facilities

Assets

Supplies

Sustainability

Transparency

Safety

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Operational footprint

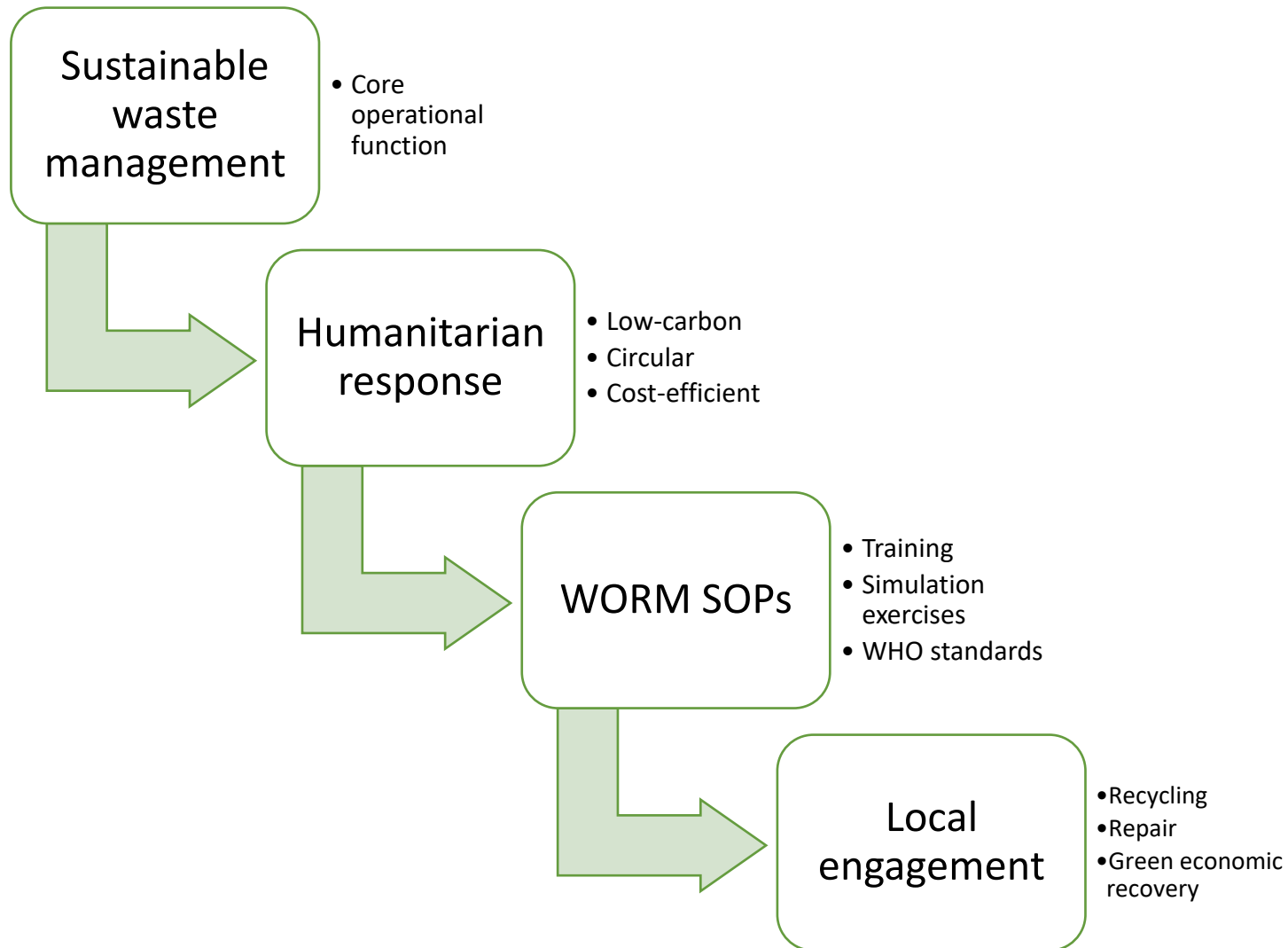


Key results and achievements

1. Two standardized SOPs covering material and waste lifecycle in EMTs and field hospitals.
2. Integration of circular economy principles into humanitarian logistics in EMT operations.
3. Practical tools and templates for waste segregation, tracking, and donation documentation.
4. Cross-sector collaboration with relevant actors (ICRC, FRC, IMC, Hanken, PSA, and WHO EMT).
5. Contribution to global policy: Inputs sharing with relevant forums such as WHO EMT CC for potential standardization.
6. Evidence-based innovation.



Lessons Learned and Way Forward



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BREAK

15 minutes 😊



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Waste in humanitarian Operations:
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OPPORTUNITIES AND TRADE-OFFS OF BIO-BASED MATERIALS

Dr. Sarah Joseph (KLU)



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DESCRIPTION OF OBJECTIVES

What do we want to accomplish?

Assess **opportunities, trade-offs, and (un)intended consequences** of using bio-based solutions

- Develop **causal loop diagram (CLD)** regarding the use of bio-based materials
- Use the CLD to **analyze the consequences** of the different choices and identify **mitigation strategies** to combat negative unintended consequences

Also considering potential opportunities and challenges in the humanitarian context

INTRO TO CAUSAL LOOP DIAGRAMS

What are Causal Loop Diagrams (CLDs)?

Causal Loop Diagrams are visual tools used to represent the feedback structure of systems. They help us understand how variables in a system influence one another—either reinforcing or balancing change.

Why use CLDs?

- Reveal feedback dynamics in complex systems
- Support systems thinking and strategic decision-making
- Identify leverage points for intervention

E.g., How do different parts of the system affect each other?

E.g., What could be the unintended effects or unexpected trade-offs?

E.g., How can we shift the system towards better outcomes?

DATA COLLECTION

What data sources do we use?

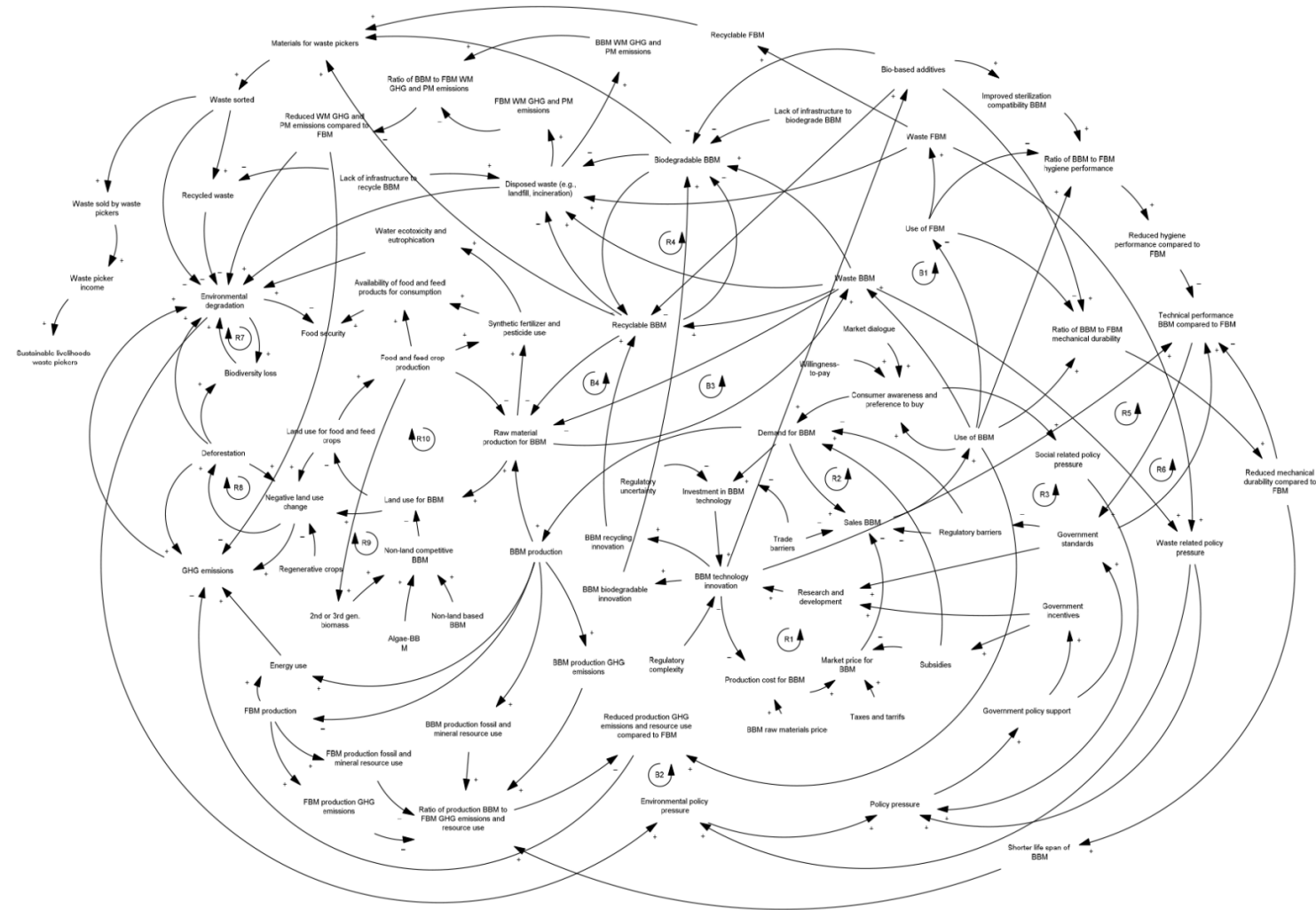
- Academic and grey **literature**
- **Life Cycle Assessment (LCA)** results from previous WORM deliverable
- External **stakeholder** engagement
 - Internal workshop with project partners
 - External validation workshop with bio-based experts
 - Interviews



CLD BIO-BASED MATERIALS

Full model

- Market adoption
- Consumer awareness and preference
- Policy development due to environmental, waste, and social pressure
- Technical performance and quality
- Environmental impacts (e.g., deforestation, loss of biodiversity, GHG emissions, resource use)
- Food security
- Waste management and circularity
- Sustainable livelihoods for waste pickers



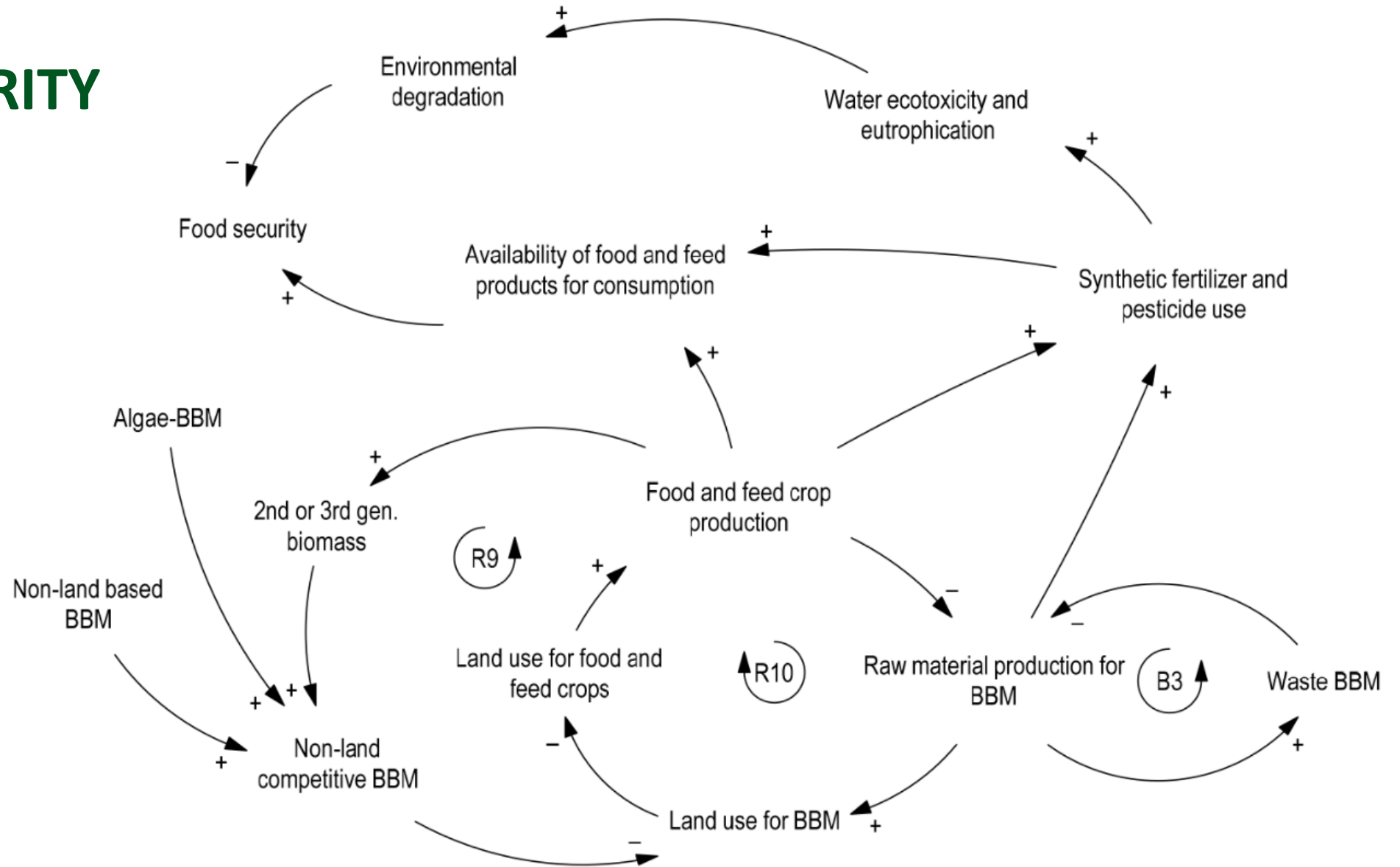
TRADE-OFFS OF BIO-BASED MATERIALS

What are potential unintended consequences?

Performance	Environmental	Humanitarian context
• Durability • Hygiene • Function	• Emissions • Deforestation • Biodiversity	
Societal	Waste treatment	• Accessibility to bio-based products • Limited funding for “green” products • Limited purchasing power • Strict requirements or standards
• Food security • Impacts for waste pickers	• Recyclability • Reusability • Impacts of WM	

FOOD SECURITY

Example CLD



MITIGATION STRATEGIES

What can be done to address these trade-offs?

- Use **low-impact** feedstocks/raw materials
- Support **regenerative** agriculture
- Enhance **technical performance**
- Improve waste **infrastructure**
- Design for **circularity**
- Protect **waste picker** livelihoods
- Adopt **Life Cycle Thinking** in procurement

QUESTIONS?

Thank you for your support!



Please also feel free to contact sarah.joseph@klu.org for any further questions or comments.



Waste in humanitarian Operations:
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Scaling business models for circular economies in humanitarian response

Therese Marie Uppstrøm Pankratov



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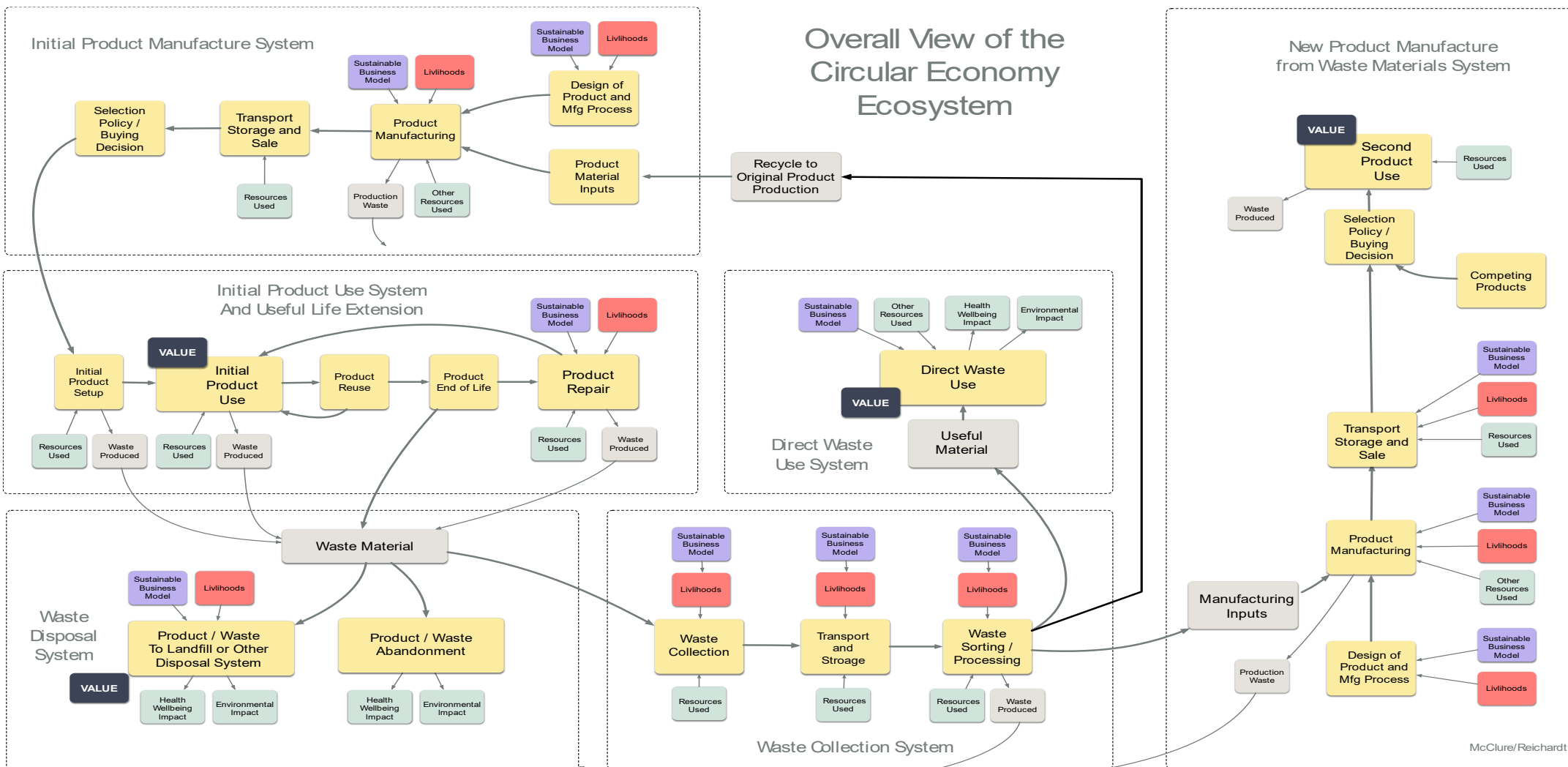


Scaling business models for circular economies in humanitarian response

- Circular Economy strategies seek to **reduce the environmental impact of things we produce and use** in the world, by minimizing waste and pollution, keeping materials and products in use and helping to regenerate natural systems.
- Business models are the **systems you use to operate** in the real world, so that you can create value over time.
- Circular economy business models:
 - **Downstream** – Innovative business models aiming to reuse, recycle and repurpose waste
 - **Upstream** – Innovative business models that minimise waste



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Challenges to introducing circular economy business models in humanitarian response

- Developing a joint understanding of the true cost of waste in humanitarian operations and the opportunities that circularity represents
- Financing and budgeting,
- Training and employing the right expertise,
- Managing downstream circular business models,
- Humanitarian procurement procedures,
- Scaling the circular business models,
- Creating a complete CE system



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Repair for reuse or sale

Example repair for reuse: Broken electronics are brought from owner to repair shop and the product gets repaired (at cost/ reduced cost) to extend lifetime of product.

Example repair for sale: Broken product is being collected or disposed, the product is repaired and sold directly to customer from repair shop or bought and resold by a vendor to an external market.





Circular economy business models in action

“Greening Humanitarian
Responses Through
Recovery, Repair, And
Recycling of Solar Products
in Displacement Settings”

Project lead: IOM

Location: Northeast
Uganda

Partners: Cooperatives,
Humanitarian
organisations, Civil Society,
Community-Based
Organizations, Private
Sector Partners, Local
Governments, Academic
institutions



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Recommendations for increased circularity in humanitarian assistance

The transition to a CE can incur longer term savings, improve livelihoods, prevent harm and deliver better, more environmentally responsible, humanitarian operations.

To realise CE at scale in the humanitarian sector, it is important to

- Move from seeking technical solutions to plan for system change – taking an ecosystem approach. This includes considering whole supply chains, local markets, user behaviour, demand, and financing.
- Develop agile ways to finance up-front costs and long-term sustainability.
- Focus on procurement – Innovation friendly/ Innovative procurement.
- Ensure local leadership, employ the right experts and facilitate capacity building of all stakeholders
- Understand the market



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Requirements of working systems

- **Completeness:** Is the end-to-end system complete with all the parts working together?
- **Motivation:** Is every actor who participates in the system motivated to do their part?
- **Competitiveness:** Will users of this solution select it over other available alternatives?



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Waste Management in Emergency Medical Teams (EMTs)

Syed Yasir Ahmad

Global WASH Advisor, International Medical Corps



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What Is an EMT?

- ▶ EMT Classification Types
- ▶ Emergency Deployment
- ▶ Waste Management Challenges

Importance of Waste Management in EMTs



- ▶ **Infection Prevention**
- ▶ **Operational Efficiency**
- ▶ **Environmental Protection**
- ▶ **Core Operational Integration**



Types and Categorization of Waste

- ▶ Diverse Waste Types
- ▶ WHO Color-Coded System
- ▶ Importance of Categorization



Waste Handling and Lifecycle Framework

- ▶ On-site Waste Management
- ▶ Lifecycle Approach
- ▶ Circular Resource Management
- ▶ Shift to Sustainability

Lifecycle-Based Approach



Full Lifecycle Coverage: Procurement → Use → Reuse → Maintenance → Repair → Recycling → Refurbishment → Reverse Logistics → Recovery



Core Principles: Circularity and traceability at every stage



Operational Integration: Embedded into EMT supply chain and SOPs

Use, Reuse and Maintenance

Best Practices: Use autoclaves for reusable tools and gowns; Favor modular maintainable, service-backed equipment; Use biodegradable and reusable items

Challenges: Limited sterilization infrastructure; Spare part shortages and power incompatibility.

Recommendations: Promote behavior change (e.g., reduce PPE overuse); Train local technicians; Avoid complex, unsuitable equipment; Monitor usage and waste for improvement.

Repurposing, Repair, Recycling & Refurbishment

Best Practices: Color-coded segregation and dedicated waste zones; Repurpose disinfected containers; Partner with local refurbishers and recyclers; Form waste committees for oversight.

Challenges: Limited repair infrastructure; Lack of local after-sale service; Cross-border constraints on refurbished goods.

Recommendations: Establish national/regional technical working groups; Stock essential spare parts; Prefer simpler, analog tools; Integrate 3Rs (Reduce, Reuse, Recycle) into SOPs.

New approaches and practices

Modular Waste Zones – Plug-and-play infrastructure for rapid deployment.

Green Procurement – Life cycle costing and bio-based products.

Circular EMT Design – 3Rs (Reduce, Reuse, Recycle) integrated into setup.

Digital Traceability – QR-based tracking for transparency.

Circularity Indicators – Metrics like reuse and recovery rates.

Inclusive Partnerships – Safe engagement of informal recyclers.

Donation Pathways – Ethical handover without burdening local systems.

Standardized Documentation – Tools for compliance and accountability.

Reusable & Biodegradable Products – Reduce environmental footprint.

Data-Driven Accountability – Sustainability indicators for decision-making.

Importance of Health Facility Waste

- ▶ Reduced exposure to multi drug-resistant bacteria.
- ▶ Help control **nosocomial disease**.
- ▶ Avoid repackaging and sale of contaminated needles.
- ▶ Cut cycle of further infection.
- ▶ Dramatically reduce **HIV/AIDS, Hepatitis transmission**.
- ▶ **Efficiently and cost-effectively** address health workers' safety issues.

Waste Disposal Containers/liners for waste types



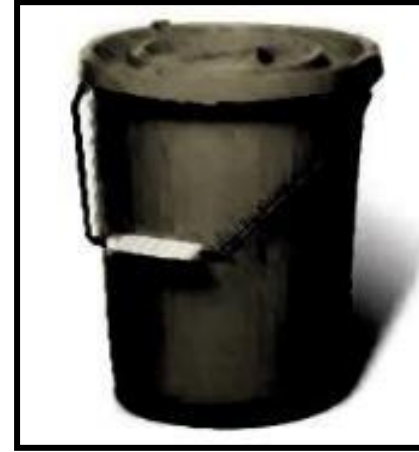
Medical waste bin lined with red trash bag



General waste bin lined with black trash bag



Sharps container



Commode bucket for liquid waste



Bucket for placentas or body parts

Temperate climate:

- 72 hours in winter
- 48 hours in summer

Warm climate:

- 48 hours during the cool season
- 24 hours during the hot season

PANEL DISCUSSION

Field-based solutions for managing medical waste

Moderator: Virva Tuomala (Hanken)

Speakers:

- Hellen Wanza (Pamela Steele Associates)
- Claire Barnhoorn (Solvoz)
- Ville Juusela (Finnish Red Cross)
- Lucie Guilloteau (Euronovia)



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