Reduction of Occupational Risks
Associated with the Informal Collection of Recyclable Materials

in Addis Ababa, Ethiopia

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Federal Institute for Occupational Safety and Health, Germany
• Portrait of BAuA
• Project
• Recyclable collectors pilot project
Federal Institute for Occupational Safety and Health, Germany

• Under jurisdiction of the Federal Ministry of Labour and Social Affairs (BMAS)
  – Assistance with execution of laws
  – Research and advice
  – Networking and information
    • WHO-CC / ILO / ISSA
A holistic approach including

- adapted technologies,
- greenhouse gases and emissions,
- socio-economic, cultural and gender aspects,
- occupational safety and health (OSH),
- training and further education,

exemplarily for the city of Addis Ababa – Ethiopia
Recyclable collectors pilot project

Improving occupational safety and health of itinerant buyers of recyclable materials

1. Finding participants
2. Risk assessment
3. Development of safety measures
4. Implementation
5. Challenges and ways to overcome them
Informal sector

- Self-”employed”
- Ethiopian regulations not applicable
- No official inspection
- Low income (20-50 €/Monat)
- Social insurance not affordable/no priority
- Risky activities

Low-tech and low-cost measures
Recyclable Collection Today
Recyclable Collection Today
Recyclable Collection Today
### Results of Risk Assessment

<table>
<thead>
<tr>
<th>Risk</th>
<th>Contributing Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents (tripping)</td>
<td>road surface</td>
</tr>
<tr>
<td>Dermal exposure to pathogens</td>
<td>contamination</td>
</tr>
<tr>
<td>Dermal exposure to hazardous chemicals</td>
<td>collected items, contamination, bag material</td>
</tr>
<tr>
<td>Cuts</td>
<td>collected items, bag material</td>
</tr>
<tr>
<td>Physical overload</td>
<td>weight, body posture, walking distance, street surface</td>
</tr>
</tbody>
</table>
Hierarchy of Safety Interventions

Most effective:
Measures at the top of hierarchy

S - Substitution of hazardous process or material
T - Technical measures (engineering controls)
O - Organisation
P - Personal protective equipment
P - Personal behaviour
Solution

Concept of hiking/trekking backpack
  • Transferral of weight to the hips

Solid, durable material
  • Skin protection

Recyclable material
  • Waste management
  • Additional income for another person
First prototype
Results of field test

Participating collectors (3) not satisfied

- Material / design
- Suspicion of population

Lack of enthusiasm / involvement of collectors

- Social status?
- Shyness?
- Expectations?

Strategy revision
New strategy

More group members (ca. 10-15)

Workshop

- to find motivated people
- to obtain a broader range of information
- to learn about participatory constraints
Workshop

- Short introduction of participants: Name, work area, number of years as a collector, age

Focus group discussion: What problems do you experience during your work?
- Group 1
- Group 2
- Group 3
- Group 4

Occupational problems

Consensus on Occupational problems, shared experiences

- Plenary discussion

Focus group discussion: What consequences arise from these problems?
- Group 1
- Group 2
- Group 3
- Group 4

Associated consequences

Consensus on consequences, shared experiences

- Plenary discussion
Workshop

Prioritization:
Each person chooses three severest problems

Film and presentation on occupational safety and health

Plenary discussion:
What could we do to reduce these problems?

Severity of problems
1. Lack of working capital
2. Lack of storage
3. Back pain

A: Establish worker associations
B: New transport equipment

Where do you want to participate?

Group A: Social systems/association (16 persons)

Group B: Development of transport equipment (14 persons)

No further participation (0 persons)
Collectors develop their own solutions.
We only guide the process.

- Process promising so far
- Choice for other materials
- Design adaptation
- Group distributes tasks among members!
Conclusions

• Occupational safety risks detected
• Idea: backpack to alleviate OSH burdens
  - Design concept of “modern” backpacks
  - Adaptation to local requirements
• Involvement of target group indispensable
  - Selection of persons is a core challenge

Transfer of European concepts, not solutions.
Stay flexible.
Process is part of research.
Thank you

Merci
Daniela Bleck

Risk Prevention Cycle

Start

Monitoring/ reviewing

Identifying workplaces & procedures

Identifying hazards and those at risk

Evaluating and prioritising risks

Deciding on preventive action

Taking action
Second prototype, version 1

Canvas with foam to protect back

From professional occupational safety and health perspective:

Design concept adaptations!

First test with common collected materials

- Collectors suggested minor design adaptations