



**Conference of the Parties to the Basel Convention
on the Control of Transboundary Movements of
Hazardous Wastes and Their Disposal
Fourteenth meeting**

Geneva, 29 April–10 May 2019

Item 4 (a) (iii) of the provisional agenda*

**Matters related to the implementation of the Convention:
strategic issues: development of guidelines for
environmentally sound management**

**Guidance on how to address the environmentally sound management
of wastes in the informal sector**

Note by the Secretariat

At its fourteenth meeting, the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, in decision BC-14/3 on developing guidelines for environmentally sound management, adopted guidance on how to address the environmentally sound management of wastes in the informal sector. The guidance referred to above were prepared by the expert working group on environmentally sound management, taking into account comments received from Parties and others. The text of the final version of the guidance, as adopted, is set out in the annex to the present note. The present note, including its annex, has not been formally edited.

* UNEP/CHW.14/1.

Annex

Guidance on how to address the environmentally sound management of wastes in the informal sector

I. Background

A. What is the informal sector?

1. Many thousands of people in developing countries depend on recyclable materials in waste for their livelihoods. It is difficult to know with certainty what percentage of urban populations engage in this activity as the informal economy is often not captured by official statistics and census data, but it has been estimated that up to 2% of the population in Latin American and Asian cities survive by scavenging for recyclable material in waste.¹

2. There are many different viewpoints concerning what characteristics define the informal sector. In general, the informal sector consists of individuals, groups and small businesses that perform informal waste services involving the collection and sale of recyclable wastes, usually through middlemen.² Workers earn income by selling the recyclable wastes they collect to a network of dealers and recycling industries that work within the formal private sector;³ in other cases, workers may sell wastes to other informal sector workers that use the material as input into another process or product (e.g., use of used parts to repair equipment).

3. Generally, workers in the informal sector engage in collection, sorting and recycling activities without employment contracts and do not have access to social safety net programs (e.g., healthcare, pension, etc): sometimes they do not operate within a legal framework. In some cases, the informal sector operates in competition with the public sector and the formal private sector, while in other (rarer) cases, the informal sector may work in parallel or in conjunction with the services provided by the formal sector.

B. Managing waste in the informal sector

1. Benefits

4. The informal sector is generally considered to provide a valuable service, making significant contributions to recycling in urban areas in many countries. Unfortunately, there is little quantitative data on recycling achieved by the informal sector in developing countries, but some research estimates informal recycling to be significant.⁴ Other environmental benefits provided by the informal sector include diversion of waste from landfilling or other final disposal operations. As a result, space at disposal sites is reserved for wastes as valuable materials are diverted for recycling or reuse.

5. The informal sector also contributes a number of economic benefits. Informal waste management systems generate jobs and can be an important source of income for the poor. Although not formally recognized, the formal waste management systems in developing countries depend upon the waste collection services provided by waste pickers, scrap collectors, traders and recyclers.⁵ Finally, the recyclable wastes collected by informal waste workers provide valuable raw materials to the local recycling and/or reuse industry.⁶ This supply of secondary raw materials can substitute new materials and stimulate the manufacture of low-cost, affordable products for the local community.⁷

2. Drawbacks

6. An assessment of the informal waste management sectors around the world reveals serious challenges with respect to labor safety and environmental impacts. Often informal workers operate in poor working conditions and employ crude techniques to process and recover valuable materials. For example, many people work informally in and around landfills and dumpsites to collect whatever they deem valuable. And in cases in which waste is collected with the aim to recover resources, oftentimes

¹ Medina, 2000.

² Aparcana, 2017.

³ Aparcana, 2017; Wilson et al., 2009.

⁴ Wilson et al., 2009.

⁵ GTZ 2010.

⁶ Wilson et al., 2009; Scheinberg, 2001.

⁷ Wilson et al., 2006.

the processing techniques used to recover materials are suboptimal resulting in the loss of valuable resources for recovery and recycling. In all cases, environmental contamination and worker exposure to hazardous materials is prevalent, especially through the unsafe handling and processing of hazardous waste. More information about the negative aspects of managing waste in the informal sector is provided in Section III. Addressing ESM in the informal sector.

C. Types of informal sector activities

7. The types of informal sector activities typical in one country or region can vary depending on the waste collection services provided by the formal sector and where and how the separation of waste occurs.⁸ Note that informal waste activities can be legal or illegal, depending on national or local law, but the perception that the work is illegal contributes to the marginalization by society of informal waste workers.

8. Some examples of the most common categories of informal waste workers include:

(a) Waste pickers in streets collect recyclable material from waste found in streets, markets, communal waste collection bins, and transfer stations.⁹ Waste pickers may use hand carts, sacks, or other materials to carry collected material;¹⁰

(b) Waste pickers at dumpsites sort through waste at open dumps to select useful material before the waste is covered. The material is often contaminated, damaged, or soiled and considered undesirable to other waste pickers;¹¹

(c) Itinerant waste buyers go door-to-door to collect, buy or trade specific recyclable waste from households, institutions and commercial centers. Waste buyers often use bicycles, hand carts or wheelbarrows to collect material;¹²

(d) Informal waste aggregators, sorters or pre-processors buy wastes from other informal waste workers and store them to sell them in bigger quantities to other recyclers or sort or pre-process them to sell higher value materials;

(e) Municipal waste collection crews collect and separate recyclable material from vehicles transporting waste from residential areas to final disposal sites.

9. In many developing countries, the informal sector also plays a significant role in the processing of waste and recovery of valuable recyclable wastes, especially with respect to e-waste. Typical informal e-waste recycling activities include the manual dismantling and segregation of components and the use of crude techniques for metal recovery. For example, workers commonly strip gold and other metals from wires in open-air acid baths and burn cables and other waste to recover copper and other precious metals.

D. Supply/value chains

10. The informal recycling sector is often highly adept at identifying wastes of value. While the type of recyclable material available to collect depends on the composition of waste generated by the local community, commonly collected materials include paper and cardboard, metal scrap (aluminum, steel, tin), PET (polyethylene terephthalate) bottles, glass, rubber, wood and textiles.¹³ Organic waste can also be valuable as livestock feed, fertilizer or fuel.¹⁴ Workers provide added value to wastes by collecting, sorting, undertaking pre-processing activities (e.g., washing, compacting, baling), and accumulating materials into commercially viable quantities.¹⁵

11. Despite the variability in how informal waste workers source material, the supply chain is generally the same across the different categories described in paragraph 8 above. Workers in the informal sector collect, segregate, and transport secondary raw materials to sell to middlemen who may be dealers, small or medium recycling enterprises, junk shops, intermediate processors, brokers

⁸ Wilson et al., 2009.

⁹ Wilson et al., 2009; Wilson et al., 2006; Zia et al., 2008 ; Ezeah et al., 2013.

¹⁰ Scheinberg et al., 2001.

¹¹ Ezeah et al., 2013.

¹² Wilson et al., 2009.

¹³ C. Ezeah et al., 2013.

¹⁴ Wilson et al., 2006.

¹⁵ Schienberg, 2001; Wilson et al., 2006.

and/or wholesalers.¹⁶ Middlemen then sell the materials to small industries, traders, large scale enterprises and/or exporters who sell the recyclable wastes to the manufacturing industry.¹⁷

II. Objective of the guidance

12. The objective of this guidance is to provide guidance about how to address and improve environmentally sound management of waste in the informal sector and describe ways to mitigate the potential for adverse environmental impacts (e.g., open burning, indiscriminate dumping of residual wastes, etc.) and to provide considerations for how to integrate the informal sector. This guidance does not go into aspects of labour, social framework, security or other non-ESM related issues. These are well addressed in other fora and specialized literature.

Target audience

13. Although this guidance addresses environmentally sound management in the informal sector, informal collection and recycling raises a host of multidisciplinary issues, including social and economic matters. For this reason, this document might be useful to a wide audience including policy makers, regulators, and enforcers at all levels of government covering a number of disciplines – environment, health, social, economic, and labour; industry, including small to medium enterprises; downstream industries; cooperatives (organizations of informal waste sector or waste pickers), individual workers in or in close action with the informal sector; NGOs; and consumers. However, this guidance attempts to promote ESM practices in the informal sector and is geared mainly towards policy makers.

III. Addressing ESM in the informal sector

A. Challenges facing the informal sector

14. Despite the positive environmental and economic contributions of the informal waste sector, informal waste workers face many serious problems, such as poor working and living conditions, especially when they work (and live) on or near landfills or open dumps. Work in the informal waste sector poses numerous risks to the health and general well-being of workers. Workers usually work without protective clothing or equipment, resulting in direct contact with waste. Occupational health risks from manual handling of waste are numerous, including injury from sharp objects (e.g., broken glass, needles from hospitals), health problems from contact with and/or inhalation of infectious or toxic materials, and inhalation of smoke and fumes from open burning of waste.¹⁸ In many cases, vulnerable groups such as children, women, and the elderly are the most exposed to these risks, as they play critical roles in informal sector activities.

15. Informal waste workers are also subject to discrimination, exploitation by middlemen, and the social stigma of being associated with waste and illegal activity. Additional problems include school absences for children and incomplete school education for adults. As a result of these various factors, families working in the informal sector suffer from a lack of socio-economic upward mobility. It is common for families to work in the informal waste sector over multiple generations.

B. Challenges to addressing ESM in the informal sector

16. As noted above, informal waste management poses numerous risks to the health and general well-being of workers and in many cases, vulnerable groups. Working conditions are poor and include permanent exposure to toxic substances. For example, the informal e-waste recycling sector in many countries uses primarily “backyard” recycling methods, risking significant impacts on the environment and human health. Informal e-waste practices, for example, use acids and cyanides to extract gold in circuit boards and then dump the remaining liquids into local water systems. The informal recyclers also employ open burning to remove insulation from copper wires, resulting in the emission of dioxins, furans and other pollutants.¹⁹

17. The need to address public health concerns and to promote best waste management practices has historically guided the development and implementation of waste management policies and laws. However, in certain countries, the application of traditional public waste management policies has

¹⁶ Wilson et al., 2006.

¹⁷ Sembiring and Nitivattananon, 2010.

¹⁸ Wilson et al., 2006.

¹⁹ Williams 2013.

proven to have been ineffective in addressing the challenges posed by informal waste management. Such policies may exacerbate, rather than improve, conditions for the informal sector.²⁰

18. Up until recently, policies and regulations aimed at the informal sector included banning informal recycling, such as in China in 2003.²¹ Additionally, many countries apply policies that are counter-productive, including repression (e.g., police harassment resulting from embarrassment over the presence of waste pickers), neglect by public authorities, and/or collusion (e.g., tolerance of waste pickers in return for either bribes or support for political parties).²² Some countries have imposed trade bans on e-waste in addition to domestically banning informal practices. However, enforcement of trade bans can be challenging.

C. Opportunities to incorporate ESM practices in the informal sector

19. National, regional (e.g., state or provincial) and local governments seeking to improve the collection and management of waste and increase recycling rates should decide how to address the informal sector when developing policies to establish or improve waste management systems. Policies that crackdown on or prohibit recycling by the informal sector may do more harm than good by adversely impacting livelihoods, and thus exacerbating the poor living and working conditions of an already vulnerable population.²³ The environmental and health impacts of informal activities may also worsen if workers elect to work clandestinely and employ more polluting and unsafe practices. A more practical and sustainable approach would be to identify ways to strengthen the informal sector by incentivizing the adoption of environmentally sound management practices in their work and thus putting them on track to eventually comply with all relevant policy and legislation on the matter.

20. The following key elements may be considered when identifying ways to incorporate environmentally sound management practices in the informal sector:

(a) **Consider appropriate division of labor between the informal and formal sector.**

When identifying policies to strengthen the informal sector by incorporating environmentally sound practices, it is important to explore what role the informal sector can play in environmentally sound waste management systems. It may be appropriate to delegate certain recycling activities to the informal sector and other activities to the formal sector. The goal should be to capitalize on efficiencies and take into account social and employment creation aspects while reducing occupational and environmental exposures to hazardous and unsafe materials. For example, the informal sector may be efficient at collecting recyclable wastes, especially in areas difficult to reach by the larger vehicles used by municipal or private waste collection companies. Workers are knowledgeable and skilled at navigating the areas where they operate and have relationships in the community which can improve collection rates. The informal sector also plays a significant role in the manual dismantling and segregation of recyclable wastes, especially of e-waste. These activities can be done safely by the informal sector with the use of appropriate tools and protective equipment (e.g., gloves, masks, boots). However, the further processing of recyclable wastes, especially hazardous waste, should be undertaken by the formal sector. The crude and polluting methods employed by the informal sector to recover metals and other valuable material should not be permitted. Policies should incentivize the informal sector to restrict their activities to collection and dismantling or to shift towards safer processing techniques and facilitate an appropriate division of labor between the formal and informal sector;

(b) **Facilitate collection and transportation of recyclable wastes by the informal sector.**

Informal workers are knowledgeable and highly skilled at collecting recyclable wastes, whether directly from households, street containers, or at disposal sites. Because they use wheelbarrows, carts, and other small-sized modes of transport, workers are able to reach places inaccessible to the larger vehicles used by the formal sector. As a result, workers collect waste that the formal sector is less well-equipped to collect. Ways to facilitate collection include providing minimum means of recognition to informal collectors (e.g. identity cards) which facilitate interaction with households or institutions and helping the informal sector plan more efficient collection systems, such that their routes are optimized and total distance travelled is reduced. The vehicles used by individual workers should also be safe and protect the worker and others from contact as well as prevent release of waste into environment. Other strategies to improve collection include policies that encourage or

²⁰ B. Bakhiyi et al., 2018.

²¹ Williams, et al 2013.

²² Medina 2000.

²³ B. Bakhiyi et al., 2018.

require segregation of waste at the source and that educate the public about the value of the informal sector in the recycling process (as described below);

(c) **Segregate wastes at the source.** Wastes should be segregated at the point of generation. Segregating wastes before they are collected by the informal sector helps reduce occupational and environmental exposures to potentially hazardous and unsafe materials (e.g., sharp objects, infectious waste, hazardous chemicals) and helps improve the quality of recyclable wastes by reducing contamination. Hazardous wastes should be separated from other wastes, and when possible, non-hazardous wastes should be further separated such that recyclable wastes (e.g., metal, cardboard, glass, etc.) is separate from biodegradable (e.g., organic waste) and non-biodegradable material. Separating wastes also has the added benefit of improving efficiency by avoiding the need for waste pickers to sort waste during the collection process;

(d) **Facilitate education of and interaction with waste generators.** In Brazil, the collection of recyclable wastes by the informal sector takes place in an organized manner via a system known as "solidarity selective collection". Recyclable wastes are separated and set aside by the generator of the waste (e.g., households) for collection by associations or cooperatives of waste pickers. The system is designed to maximize the efficiency of collecting recyclable wastes from household waste, while empowering and creating a sense of solidarity among workers. Because waste pickers go door-to-door to collect recyclable wastes, the system allows for frequent interaction and dialogue between the waste generator and collector. This frequent interaction raises public awareness of recycling and the importance of waste segregation and is a key factor in the program's success;

(e) **Improve working conditions.** Unsafe and unfit working conditions increase the likelihood for occupational and environmental exposures to hazardous materials (see paragraph 14 above). To improve these conditions, protective equipment (e.g., gloves, boots, masks) should be used or in some cases even provided to prevent exposure to hazardous chemicals and dusts. Workers should also have access to adequate work space, including proper ventilation, and appropriate tools to facilitate the safe transport, dismantling, and processing of recyclable wastes;

(f) **Reduce take-home exposures.** Workers involved in recycling in the informal sector often live close to or within recycling sites. Practices that can help reduce the potential for transporting contaminants outside of the recycling area include using different clothes for work and home and washing at the end of the workday to prevent tracking of contaminants to households. Keeping homes, vehicles and other personal items clean can also help reduce any contamination that may be introduced into residential areas. Handling and processing of hazardous waste should never take place within households;

(g) **Designate specific areas for processing.** Exposure to pollutants from informal recycling may occur through contaminated air, surface and ground water, soil, and food. In many countries, informal workers conduct processing activities within the home or near residential areas. To reduce the potential for exposure by family members and the surrounding population, specific indoor areas away from homes and residential areas should be identified for sorting, processing (e.g., dismantling and segregation of parts for e-waste), metal recovery, and other recycling activities. Processing sites should also be located away from bodies of water such as rivers and streams, and other natural resources (e.g., livestock and other wildlife, grazing areas). For example, buildings such as sheds or warehouses can be adequate for this purpose. Such structures should have four walls and a roof and be built to prevent releases of hazardous contaminants into the environment. Buildings should also have adequate ventilation for workers. For processing of hazardous wastes, floors should be paved and work surfaces should be impermeable to facilitate cleaning and containment of spills or other releases. These recycling structures can be fixed or mobile depending on the wastes being managed and workers' needs. Recycling activities nevertheless carried out at landfills should be located away from the working surface of the landfill (i.e., where waste is being compacted and covered) to protect the health and safety of workers. Depending on the scale of the recycling, it may be appropriate to establish regional (e.g. state or provincial) sorting and processing centres to improve efficiency and reduce transportation costs;

(h) **Raise awareness of and provide training in environmentally sound recycling practices.** Workers involved in informal recycling activities are generally untrained and work in unsafe conditions, mainly due to a lack of knowledge about the inherent hazards of the work or lack of access to ways to protect themselves from occupational exposures.²⁴ The success of any project involving selective collection and recycling depends on the training and education of both the informal sector and the public. Education programs for the informal sector should identify the occupational

²⁴ B. Bakhiyi et al., 2018.

hazards and risks of handling and processing waste and identify practical measures or improvements to reduce exposure to such risks. Education programs for the public should focus on the importance of recycling and how to properly segregate recyclable wastes from other waste at the point of generation. Poor segregation is often the weakest point in selective collection systems and can result in inefficiencies and lower recycling rates. Publicity campaigns and workshops at schools and universities are potential ways to raise awareness. Social media may also be a powerful communication tool;

(i) **Prevention of littering during collection.** One way the informal sector may obtain recyclable wastes is by sorting through waste in street containers. In the process, they may scatter waste around the containers or in the area where sorting takes place. Efforts should be made to maintain cleanliness around waste containers. One approach to controlling this problem would be to give specific waste pickers responsibility for certain containers, allowing them access to the waste as long as they keep the surroundings clean.²⁵ Separating recyclable wastes from other wastes, as described above, also helps avoid the littering problem by reducing the need for sorting waste in the street;

(j) **Disposal of residual waste/non-recyclables.** The final disposal of residuals and non-recyclable waste should be done in an environmentally sound manner by state-of-the-art facilities and in accordance with the available technologies of each country or region. Disposal operations that allow for energy recovery should be considered, if available and in accordance with applicable national and local laws. Open burning, especially of hazardous waste, should be prohibited;

(k) **Improve the organization of the informal sector.** To facilitate the incorporation of environmentally sound practices in the informal waste sector, it is important to consider strategies to help strengthen worker organization and the technical and management capacity of such organizations. Whether as associations, cooperatives or small enterprises, when individual workers organize, they can more effectively work collaboratively together and with authorities to improve their working and living conditions, and influence policies that impact them and the informal sector. Some considerations related to organizing the informal waste sector as an integrated part of the formal sector are discussed in the following section.

D. Considerations for integrating the informal sector

21. Contemporary initiatives to improve the working conditions and environmental impact of the informal sector focus on integrating the informal sector. Since the integration of the informal sector concerns social, labour, health, economic and other issues that go beyond ESM, it is only briefly addressed in this section.

22. There are many different policy approaches to integrating the informal sector with the formal sector as well as many different views of what constitutes formality and how to achieve it. Historically, initiatives geared towards supporting the informal sector focused on social inclusion and protection. More recently, there has been a growing recognition among policymakers of the economic, social and environmental benefits of the informal waste management sector. As a result, significant activity is underway in a number of countries to develop policies supportive of improving the working conditions of the informal sector, promote ESM, and recognize the importance of the informal sector in recycling systems. Such efforts are often led by NGOs or community-based organizations.²⁶ However, governments in countries like Brazil, India, Peru, and the Philippines have established national policies that integrate the informal sector role in public collection and recycling systems.²⁷ Integration options could be discussed in participatory, government-led stakeholder dialogues and taken into account in national and local waste management plans as well as considered in plans of private stakeholders e.g. under producer-led take-back programs for specific waste streams.

23. Some approaches to integrating the informal sector focus on organizing informal waste workers into associations and cooperatives, in community-based organizations or micro-and small enterprises, while other approaches integrate informal workers as formal workers performing waste collection or jobs at recycling facilities.²⁸ From a policy-making perspective, a holistic and integrated strategy is necessary. Such a strategy should span across a number of disciplines, as it strives to eliminate the negative aspects characterizing the informal sector, while preserving job creation and

²⁵ UN Habitat, 2011.

²⁶ Wilson 2006.

²⁷ S. Aparacana, 2017.

²⁸ S. Aparacana, 2017.

income generation potential for the informal economy. At the same time, such a strategy should promote the protection and incorporation of informal economy workers, as well as economic stability.²⁹

24. One idea explored by the United Nations University's (UNU) Solving the E-Waste Problem (StEP) Initiative is to link the informal and formal sector in relation to e-waste by harnessing the strengths and reducing the negative environmental and health impacts of the informal sector. The informal sector may be effective at collection, repair, reselling and dismantling electronics. It was surmised by this initiative that it is beneficial to leave these activities in the free market, intervening only when environmental problems arise, such as informal practices outlined above e.g. extraction of gold from circuit boards and open burning of copper wire insulation. They propose providing financial incentives to the informal sector to divert for formal processing of material that would have otherwise been destined for unsafe recycling practices.³⁰

25. The International Institute for Environment and Development (IIED) has analyzed potential hybrid formal and informal sector models where the existing informal collection and dismantling models are supported by, and integrated with, formal recycling companies using clean technologies for metal recovery and hazardous waste disposal. However, they caution that such integration models that aim for economic efficiency will not necessarily lead to social welfare synergies, so hybrid models should recognize and avoid potential risks, such as intensifying vulnerabilities, power imbalances around model design, diverging interests leading to exploitation, and undermining of informal worker cooperatives.³¹

26. In addition, the former German Technical Cooperation Agency (GTZ) and German International Cooperation Agency (GIZ) undertook two projects³² on the integration of the informal sector into solid waste management. As a result of these projects, the following recommendations are made, which are primarily addressed to decision-makers, but require partnerships with other stakeholders, such as donors, NGOs and private enterprises:

- (a) Analyse informal solid waste management activities, their linkages to the formal solid waste management system and their impacts. Documenting the informal sector contribution to solid waste management is necessary to developing a sustainable, integrated model, as data on reductions in municipal waste handling costs, environmental costs, poverty reduction, downstream employment generation and health costs must demonstrate statistically that the costs are worth the future benefits;
- (b) If significant informal waste management activities exist, foresee strategic measures for the inclusion of these activities in national solid waste management strategies, laws and regulations;
- (c) Analyse feasibility of upgrading informal sector recycling and initiating new recycling activities;
- (d) Make informal sector integration a national policy. Official recognition of the informal waste sector is important to integration of the informal sector. The interests of the informal sector and their contribution to waste management services within federal laws requires integration at political and social levels;
- (e) Encourage municipalities to actively pursue local sector integration. This is key, as they play a critical role in the integration of the informal sector as the providers of waste management services. The formation of linkages between informal sector initiatives, municipal departments and decision makers and coordination of these activities is recommended. NGOs are also important to the process as they can serve as initiators, advocates or intermediaries with the municipalities;
- (f) Support the self-organization of waste pickers. Waste pickers are independent non-organized actors, generally illiterate and unskilled. Since the informal sector is resistant to official bodies in general, it is important to influence a few of these workers to encourage and incentivize larger participation;

²⁹ ILO 2009.

³⁰ Williams, et al., 2013; Davis and Garb, 2015.

³¹ IIED 2014.

³² One such project involved case studies in Brazil, India, and Egypt (GTZ, 2010) focused on enabling conditions for informal sector integration in solid waste management; and the second was instigated by GIZ in 2011.

- (g) Provide capacity building support for waste picker organizations to improve their competitiveness and guide them through the challenges they will confront during the formation process;
- (h) Involve representatives of the informal sector in local solid waste management planning processes;
- (i) Establish waste and citizen forums to provide for dialogue between different sector stakeholders including different local government organizations, waste picker cooperatives, NGOs, representatives of autonomous waste pickers, and private companies;
- (j) Promote the participation of waste generating businesses and industries and encourage them to invest in the social enterprises of waste pickers and informal waste workers by providing financial and in-kind support;
- (k) Establish partnerships with the private sector to improve the informal sector's linkages to industrial value chains;
- (l) Improve social recognition of such waste recovery activities through public awareness and communication campaigns, partnerships with NGOs and other actors to accompany informal stakeholders;
- (m) Promote pilot projects and personal involvement. Pilot projects can provide basic data in a relatively new policy area and may serve as a catalyst for change, by inspiring stakeholders at the local level that change is possible;
- (n) Facilitate the organisation and formal recognition of informal waste workers (through identity cards, associations, co-operatives, enterprises, etc.);
- (o) Train informal stakeholders on health, environmental, technical and management aspects;
- (p) Provide information about recycling markets and prices to informal workers;
- (q) Create opportunities for resource recovery through the informal sector:
 - (i) In waste collection systems (e.g. (separate) collection contracts for registered informal sector, buy-back or drop-off points for recyclable wastes, partnerships or franchising systems with formal private sector);
 - (ii) On transfer stations or landfill sites (by providing sorting space and infrastructure, establishing agreements with waste pickers on recovery practices not disturbing landfill operation).

27. In addition to the approaches and recommendations referred to above and from the perspective of ESM, it is recommended that policy makers determine what scope of activities may be appropriate for the involvement of the informal sector. While the informal sector may have demonstrated their effectiveness in providing valuable material to recyclers in terms of the collection and sorting of non-hazardous recyclables and potentially performing preliminary dismantling activities, they often lack the technical capacity (proper tools and techniques, personal protective equipment, and a safe working environment) to perform downstream recycling activities. Integrating them in the manufacture of products from recyclable wastes or collecting and handling hazardous wastes requires capacity building and training, if not, negative impacts on human health and/or unsound environmental practices may result.

28. In conclusion, to promote inclusivity of the informal sector in the formal sector, and in-turn to promote ESM, cooperation among all stakeholders is necessary. Command and control policies and regulations, that serve more as principles than in practice, may provide little incentive for compliance and often have adverse effects on the informal sector. Multidisciplinary and comprehensive approaches to promote the integration of the informal sector should supplant such policies and regulation. Governments should involve all relevant experts and stakeholders to work towards formalizing the informal sector.

IV. Practical examples

29. Practical examples are available on the Basel Convention website.³³

³³

<http://basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMToolkit/Overview/tabid/5839/Default.aspx>.

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