

# Gender Mainstreaming

A Key Driver OF Development IN Environment & Energy



## CHEMICALS MANAGEMENT

### The why and how of mainstreaming gender in chemicals management



In urban settings, low-income populations typically reside in neighborhoods considered undesirable, such as areas adjacent to industrial zones. These places can be major sources of environmental exposure to toxic chemicals, originating from factories, landfill sites, incinerators and hazardous waste dumps.

### Why is gender relevant to policymaking and programming in the area of sound management of chemicals?

Efforts to ensure sound management of chemicals (SMC),<sup>1</sup> within a context of sustainable development, have important gender dimensions. In daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. The

level of exposure to toxic chemicals—as well as the resulting impacts on human health—are determined by social as well as biological factors.

Social factors, primarily gender-determined occupational roles, have a direct impact on human exposure to toxic chemicals, including the kinds of chemicals encountered as well as the level and frequency of such exposures. For instance, in agricultural communities in developing countries, men may be at higher risk of direct exposure to chemical pesticides during application, while women (and sometimes children) may be more likely to be indirectly exposed during planting and harvesting. At the same time, biological factors—notably size and physiological differences between women and men, and between adults and children—also influence susceptibility to health damage from exposure to toxic chemicals.

<sup>1</sup> Sound management of chemicals (SMC) is the application of best management practices throughout the life cycle of chemicals to minimise, and where feasible eliminate, the potential for exposure of people and the environment to toxic and hazardous chemicals, as well as those chemicals suspected of human and/or environmental toxicity.

### What is gender mainstreaming?

'Gender' refers to the socially constructed rather

than biologically determined roles of men and women as well as the relationships between them in a given society at a specific time and place. These roles and relationships are not fixed, but can and do change.

'Gender mainstreaming' has been defined by the United Nations Economic and Social Council as 'a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of the policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated'. The relative status of men and women, the interaction between gender and race, class and ethnicity, and questions of rights, control, ownership, power, and voice—all have a critical impact on the success and sustainability of every development intervention.

In practice, gender mainstreaming means identifying gaps in gender equality through the use of sex-disaggregated data, developing strategies to close those gaps, putting resources and expertise into implementing strategies for gender equality, monitoring implementation, and holding individuals and institutions accountable for results. Gender mainstreaming is not an end in itself; it is a process whose ultimate goal is **to achieve gender equality** (Millennium Development Goal 3).

Expanded freedoms for all, women and men, girls and boys, is UNDP's goal—both because it is necessary for development effectiveness and because equality is a core value of the UN Charter, a value all UNDP staff have pledged to protect as representatives of the UN system.

## Sound Management of Chemicals and its Importance for Human Development

Chemicals and chemical products play an important role in human development. The chemicals sector is a major contributor to national economies, accounting for nearly 15 percent of international trade in manufactured goods in 2003, as well as providing employment for more than 10 million people worldwide in 1998 (OECD 2001). Over the next 20 years, global output of chemicals is projected to increase by 85 percent over 1995 levels, with the largest increases expected to occur in developing countries (OECD 2001). Chemicals and their sound management also contribute to sustainable human development through the production and use of life-saving medicines, purification agents for treating drinking water supplies, and agricultural chemicals (e.g., pesticides and fertilisers) that boost on-farm productivity.

Despite these important economic, social, and health benefits, chemicals can be extremely harmful if they are not properly managed. Effects on human health and the environment can be immediate and catastrophic, as in the case of oil spills, large accidental releases of industrial chemicals, and acute pesticide poisonings. In the longer term, extended exposure to toxic chemicals in water, food, air, and soil can cause or exacerbate many serious human health problems, including damage to reproductive and neurological systems as well as cancer. According to the World Health Organisation (WHO), poor environmental quality is directly responsible for around 25 percent of all preventable ill health in the world today (WHO 1997). Besides the toll in human suffering, the costs to national economies—in terms of reduced worker productivity, increased health care costs, and environmental abatement efforts—can be considerable.

There is an established link between poverty and increased risk of exposure to toxic and hazardous chemicals. Some 99 percent of all poisoning cases involving agricultural chemicals occur in developing countries, where regulatory, health, and education systems are weakest (FAO 2002). Here poor people

routinely face unacceptably high risks of poisoning because of their occupations, living conditions, lack of knowledge about the chemicals they handle, and limited access to sources of uncontaminated food and drinking water.

The improper labeling, storage, and use of chemicals is a significant cause of poisoning in developing countries. Unintentional poisonings account for an estimated 50,000 deaths of children aged 0-14 years (WHO 2002) and about 5 percent of all deaths by injury of children in developing countries (Edwards et al. 1997).

## Factors Influencing Human Exposure to Toxic Chemicals

Exposure of poor people to toxic chemicals often is affected by *geographic factors*. In urban settings, low-income or minority populations typically reside in neighborhoods considered undesirable, such as areas adjacent to industrial zones. These places can be major sources of environmental exposure to toxic chemicals, originating from factories, landfill sites, incinerators, and/or hazardous waste dumps (with controlled or uncontrolled leakage).

In rural areas, where three quarters of the world's poor live, most chemical exposure is linked to pollution brought by waterways or air deposits as well as the use of pesticides in agriculture. The improper use, management, and storage of pesticides can result in contamination of air, food, soil, and drinking water (e.g., through pesticide run-off), leading to increased human exposure and associated health risks.

*Occupational factors* also play a role in mediating sources of exposure. The International Labour Organisation (ILO 2004) reports that 22 per cent of workplace fatalities and work-related diseases worldwide are due to improper handling of chemicals and other hazardous substances. Especially in developing countries, health and safety standards often are lax or poorly enforced, with severe consequences for worker health. Worldwide, improper handling and use of pesticides results in an estimated 3 million cases of acute poisoning and some 220,000 deaths annually (WHO 1990).

## Gender Differences in Exposure to and Health Effects of Toxic Chemicals

Several factors, including differences in occupational roles, household responsibilities, and biological susceptibility, impact gender differences in exposure to toxic chemicals and the resulting health impacts.

**Differences in workplace exposures.** The level and kind of chemical exposures at the workplace often differs by gender because women and men generally work at different tasks. Depending on social circumstances in particular communities, men may be at greater risk of exposure to toxic chemicals used for instance in artisanal gold mining (such as toxic mercury vapors that are released when gold is extracted from ore), tannery operations and mechanical workshops (through exposure to toxic solvents being released from paints).

Women may be at greater risk from hazardous ingredients and chemicals contained in cleaning agents, professional cosmetic and personal care products or used in textile processing. In the health care sector, women generally represent the majority of the workers (e.g., nurses, pharmacy workers), which increases their chances of exposure to chemical agents used in medical procedures.

Note that children may also be at risk of occupational exposure to toxic substances, including agricultural chemicals. For example, surveys have found that in several countries, children are engaged in the application of pesticides to commercial crops, directly exposing them to highly toxic residues.<sup>2</sup>



<sup>2</sup>The International Institute of Tropical Agriculture estimated that over 153,000 children working in West African cocoa production were engaged in the application of pesticides (IITA 2002). Half of the Cambodian farmers surveyed by the Food and Agricultural Organisation said they allowed children to spray crops (FAO 2000).



A Bangladesh boy fishing. Chemical pollution of surface water can disturb aquatic ecosystems, causing loss of habitats and biodiversity. Pollutants may accumulate in the food chain, and harm animals and humans consuming contaminated fish or drinking polluted water.

**Differences in household exposures.** Many chemical products or products that contain concentrations of toxic chemicals are used in households for cleaning (e.g., washing and cleaning agents), personal care (e.g., cosmetics and personal products such as soaps, creams, and shampoos), and pest control (e.g., rat poison, garden insecticides, etc.). Because women and girls usually assume responsibility for cleaning and household management, they are the ones more likely to be exposed to toxic chemicals found in cleaners, insecticides, and the like. Women and girls also tend to use more cosmetics and personal care products than men, and so are more likely to be affected by any dangerous ingredients or adulteration of such products.

**Differences in physiological susceptibility.** Men, women, and children vary in their physiological susceptibility to the effects of exposure to toxic chemicals. Children are generally at greater risk of health damage from toxic exposures because their

rapid development (with which chemical exposure can interfere) increases their physiological sensitivity. Risk is further magnified in children because of their small size (relative to dose) and their intake of proportionally greater amounts of environmental contaminants in water and air (relative to body size). Compounding the risk is children's lack of capacity for discrimination regarding behaviours that increase the risks of exposure.

Women often experience relatively higher physiological susceptibility to the impacts of toxic chemical exposure, especially in connection with reproductive cycles. At particular stages of their lives, such as pregnancy, lactation, and menopause, women's bodies undergo rapid physiological change, making them more vulnerable to health damage from toxic chemicals. Women's exposure to pesticides can be the cause of miscarriages, premature births, birth defects, and low birth weight (WHO 2004). A substantial portion (up to 33 percent) of a woman's chemical burden can be passed on to her baby during gestation (through the placenta) as well as via breastfeeding.

Moreover, because of their special reproductive roles, women are biologically engineered to carry greater reserves of fatty tissue throughout their life cycles, making them generally more vulnerable than men to the impacts of fat-soluble chemicals (such as Persistent Organic Pollutants—POPs) that bioaccumulate in fatty tissues.<sup>3</sup>

Men also have unique vulnerabilities based on their physiology and the types and frequency of chemical exposure they typically encounter in the workplace. Illnesses associated with men's occupational exposures to toxic chemicals include a variety of cancers, chronic diseases, and reduced reproductive capacity. In many societies, it is generally accepted that men can be asked to do more dangerous jobs than women therefore increasing the likelihood of exposure to hazardous situations and chemicals (WHO 2004).

<sup>3</sup> Of course, individuals of both sexes vary in their percentage of body fat, according to age and physical fitness.

## How can UNDP strengthen the gender dimension of its work in the area of chemicals management?

The sound management of chemicals (SMC) is essential to the achievement of sustainable development, including the eradication of poverty and disease, the improvement of human health and the environment and the elevation and maintenance of the standard of living in countries at all levels of development.<sup>4</sup>

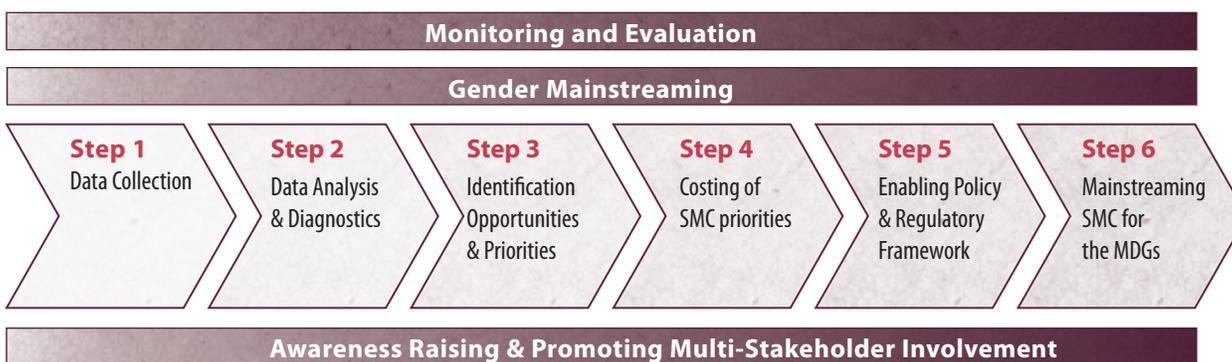
UNDP plays a key role in supporting client countries in: identifying gaps and needs in chemicals management policies and frameworks; determining visions, priorities, and targets; formulating policies; and, integrating chemicals management and related objectives into MDG-based national development strategies and poverty reduction strategies.

UNDP can support its partners in incorporating and addressing the priority concerns of vulnerable groups—including children, pregnant women, workers, the elderly, and the poor—as countries go through the multi-step process of assessing and strengthening capacity to manage chemicals safely. UNDP's stepwise approach for incorporating SMC within national development plans comprises several elements, as shown in Figure 1.<sup>5</sup>

In the following section, we discuss two overarching interventions—namely, awareness raising and ensuring multi-stakeholder participation—that will contribute to the success of all subsequent stages of the process of strengthening a national SMC regime. We then discuss priorities for UNDP support to assist partners with mainstreaming gender considerations at each step in the process of developing their chemicals regimes.

- Raise awareness of the linkages between chemical exposures, the effects on human health and the environment, and gender differences in risks and impacts.** In most communities people are unaware of their routine, even daily, exposure to toxic chemicals in the workplace, at home, and in the general environment. Thus, raising awareness of the immediate health risks of toxic chemicals used in agriculture, mining, health services, manufacturing, and household activities in developing countries is a necessary, overarching intervention that informs work at all subsequent stages of the policy process.

**FIGURE 1** Steps for Mainstreaming SMC in National Development Strategies



<sup>4</sup> Statement by ministers, heads of delegation, and representatives of civil society and the private sector, at the International Conference on Chemicals Management, Dubai, 4–6 February 2006.

<sup>5</sup> For detailed information on all stages of strengthening a national SMC regime, see the UNDP Technical Guide for Mainstreaming the Sound Management of Chemicals (SMC) in MDG-Based Policies and Plans.

Among the issues that countries can be encouraged to examine are the social factors that influence human exposure to chemicals (such as risks associated with the gender division of labour), as well as the role of physiological differences between men, women, and children in determining the health impacts of toxic exposures. Also, partners can be encouraged to pay attention to the differing implications of chemical pollution of the environment for women and men, such as impacts on women's workload due to gender-determined roles.

For example, women's workload may be increased when family members fall ill due to occupational or environmental exposure to chemical hazards, since women usually bear the primary responsibility for caring for the sick. Similarly, chemical contamination of water and food sources may add to the workload of women and girls if they have to travel farther to find safe water and food.

Below is a checklist that can serve as a basis for awareness raising efforts, with modifications to tailor it according to the country's situation.

■ **Promote a multi-stakeholder approach to ensure the participation of women and vulnerable populations in policy development and decision-making processes.** SMC

is a cross-sectoral issue that is best considered in a multi-disciplinary, multi-stakeholder context. Like awareness raising (discussed earlier), working with partners to encourage a multi-stakeholder, gender-sensitive approach is an overarching intervention that will help ensure the success and sustainability of all subsequent interventions in the multi-step process of assessing and strengthening a nation's chemicals management regime.

Among the key stakeholders that should be involved throughout the process are the relevant national ministries involved in aspects of chemicals management (e.g., ministries of environment, industry, labour, health, women, agriculture, education, trade, etc.), industry associations, labour organisations, laboratories, universities, NGOs, civil society organisations, etc.

Since women and other vulnerable populations (e.g., farmers and farm labourers, industrial

### **Awareness Raising: Sample Checklist for Integrating Gender Aspects**

- Are national/regional social factors that influence human exposure to chemicals identified/covered (such as risks associated with gender division of labour)?
- Is importance given to the linkages between SMC and the MDGs (e.g., the positive effects of SMC on attaining the MDGs, such as increased maternal health, lower child mortality, higher crop yields, clean water, etc.)?
- Have the health effects of chemical exposure been linked to the physiological differences between men, women, and children, as well as differences at various stages of development (i.e., conception, gestation, infancy, childhood, adolescence, and adulthood)?
- Are different social and economic implications of chemical pollution for men and women recognised?
- In development of training/awareness campaigns, have biases in educational systems been taken into account (e.g., participating women might be less equipped to understand, cope with, and anticipate the implications of chemicals exposure and environmental change or resource conditions)?
- Do awareness-raising activities target all stakeholders, their requirements, and their challenges? Is the timing of activities conducive to participation by all stakeholders?

workers, indigenous communities, etc.) tend to be under-represented in the chemicals sector and related SMC policy and decision-making processes, affirmative steps are needed to ensure adequate participation of all stakeholders. This can be achieved by, for example, reaching out to labour organisations, NGOs, and other groups with significant representation of women and other vulnerable groups. Outreach to NGOs and others working on gender, health, and environmental issues at the grassroots level is another key step.

Engaging with relevant industries and enterprises can also be a powerful focal point for change. Corporate environmental and social responsibility are on the rise and involving industrial companies and small and medium enterprises in stakeholder consultations throughout the process may contribute to the development of codes of conduct and other steps to reduce chemical hazards for workers and other vulnerable populations.

On the right is a checklist that can serve as a basis for a multistakeholder approach, with modifications to tailor it according to the country's situation.

### ***Multi-Stakeholder Approach: Sample Checklist for Integrating Gender Aspects***

- Are mechanisms in place to promote gender balance among participants?
- Do professional women participate (through, for example, labour organisations representing large numbers of women, as well as through universities and/or NGOs)?
- Are representative ministries for vulnerable populations participating (e.g., health, women's affairs, labour, environment, agriculture, industry, etc.)?
- Are NGOs and CSOs working on gender, health and environmental issues participating? Are networks and relationships with these organisations being strengthened?
- Are industries and enterprises that impact the health of workers and vulnerable populations participating in stakeholder consultations?



In the following section, we discuss priorities for UNDP support to assist partners with mainstreaming gender considerations at each step of a national process to develop or strengthen a sound management of chemicals (SMC) regime.

**Step 1: Ensure collection of sex-disaggregated data and information relevant to SMC.** The development of a national situation report is an important first step in assessing a country's current SMC capacity. In this step, a country determines what capacity currently exists, based on data and information gathered from surveys, research, and programmes, such as data collected during GEF-POPs enabling activities and the development of country programmes, as well as data from PRSPs and an existing National Chemical Profile.

Supporting partners in the collection and review of data and information relevant to the gender dimensions of chemical safety is a key priority for UNDP efforts. Below is a checklist that can serve as a basis for such efforts, with modifications to tailor it according to the country's situation.

### *Step 1 – Collection of Sex-Disaggregated Data Relevant to SMC: Sample Checklist for Integrating Gender Aspects*

- ✓ Are available data on chemicals disaggregated on the basis of sex, ethnicity, geography, type of labour, religion, and language?
- ✓ Do existing mechanisms for consultation and coordination on SMC include provisions for ensuring gender equality in opportunities for participation?
- ✓ Do current development plans and priorities for chemicals management address social, health, and environmental implications for the most vulnerable populations?
- ✓ With regard to assessment of hazards and risks associated with chemicals (in occupational safety and health policies, for example), are the different health implications for men, women, and children taken into consideration?

**Step 2: Integrate sex-disaggregated data in data analysis and diagnostics.** In this step, a country looks at the quality and applicability of the data gathered in Step 1 and considers what these data reveal about national capacity for SMC. To integrate gender dimensions into this step, countries can examine the results of data analysis and diagnostics in terms of gender-related issues, such as differences in risks and vulnerability in various groups in society (workers, indigenous communities, etc.). The following checklist includes examples of gender-related aspects of data analysis and diagnostics related to national SMC capacity.

### *Step 2 – Data Analysis and Diagnostics for National SMC Capacity: Sample Checklist for Integrating Gender Aspects*

- ✓ Are data on SMC sufficiently comprehensive to support drawing of conclusions concerning health implications (e.g., for women of child-bearing age, children, workers, and the poor)? If so, does a gender-sensitive analysis show discrepancies in the vulnerability of certain populations to chemical exposures?
- ✓ Are there gender-related gaps in capacity for SMC implementation, management, and service delivery (institutions, industry, health care, education)?
- ✓ Who are the beneficiaries of the current SMC regime? From a health, environmental, social, or economic perspective, do women, children, and the poor benefit from existing national capacity (policies, legislative frameworks, regulations, etc.)?
- ✓ How broad is the knowledge of SMC and how well is knowledge of chemicals and their use and application disseminated among women and vulnerable populations (e.g., is there a need for more effective educational programs)?
- ✓ Are stakeholders (such as industry, CSOs, NGOs, women, indigenous communities, the poor and other vulnerable groups, etc.) included in relevant SMC planning and implementation processes?

### Step 3: Integrate gender aspects in identification of national opportunities and priorities for SMC.

The third step in the process is identifying opportunities and priorities for strengthening national capacity for SMC, based on data analysis and diagnostics carried out in the previous step. This step encompasses two phases, the first of which is to list and describe opportunities without ranking them in terms of priority.

It is crucial that gender aspects be adequately addressed during the identification of opportunities so these can be then considered during the priority-setting phase. The checklist below highlights examples of questions to ask to ensure mainstreaming of gender considerations in the context of identification of opportunities.

#### Step 3 – Phase 1 – Identification of Opportunities: Sample Checklist for Integrating Gender Aspects

- ✓ Is a gender expert or a representative from a women's health organisation present to assist in the identification of opportunities linked to gender issues?
- ✓ Have opportunities been identified linked to the MDGs? For example, promotion of women's participation in science education and laboratory capacities and their participation in policy and legislative decision-making (MDG 3 - Promote gender equality and empower women) and promotion of safe handling of household chemicals (MDG 4 – Reduce child mortality and MDG 5 – Improve Maternal health)
- ✓ Have opportunities been identified related to meeting obligations under chemicals-related multilateral agreements (e.g., Stockholm Convention, Montreal Protocol, Basel and Rotterdam Conventions) that address hazards and risks with particularly harmful impacts on women and children?

Once the opportunities have been identified, priority setting can be undertaken. Because each country situation is unique, the criteria used for determining priorities will vary. Whatever the nature of these criteria, they should incorporate gender-related dimensions. The following checklist provides examples that can be kept in mind to ensure mainstreaming of gender considerations in setting priorities.

#### Step 3 – Phase 2 – Criteria for Setting Priorities for SMC: Sample Checklist for Integrating Gender Aspects

- ✓ Are the severity, scale, and duration of negative, chemicals-related impacts on vulnerable populations taken into consideration? For example:
  - *Health* impacts on women and men and the indirect impacts on future generations (e.g., economic implications of additional health care provision and lost work days due to illnesses related to chemicals exposure)
  - *Social* impacts related to chemicals exposure (e.g., implications for women's workload in caring for sick family members, searching for non-polluted sources of water and food for household use, etc.)
- ✓ Do the benefits associated with use of potentially hazardous chemicals (such as the use of DDT to combat malaria) outweigh the long-term health, social, and economic costs to vulnerable populations (e.g., would it be worthwhile to switch to less harmful methods for combating malaria)?

**Step 4: Costing mainstreaming of gender dimensions in SMC.** Obtaining the necessary financial resources for integrating gender dimensions while improving a national chemicals regime will not occur without securing the buy-in of central finance and economic development agencies of government. Therefore, effective communication with decision-makers—who rely primarily, though not exclusively, on economic information—is crucial.

Economic assessment is therefore a vital tool for determining priorities. For this reason, environment and health effects associated with a priority SMC problem often require valuation in economic terms in order to receive adequate consideration in national budgets and development plans.

An integrated economic analysis of effects can capture the hidden costs and benefits of policy options as well as the synergies and institutional economies of scale that may be achieved through complementary policies that support sustainable development. Many approaches have been developed to analyse the economic costs and benefits of policy options; the four most commonly used are described in the UNDP Technical Guide (UNDP 2007).

#### **Step 4 – Costing Mainstreaming of Gender Dimensions in SMC**

The costing exercise has to be performed on a country-by-country basis as it depends on the SMC priorities and gender dimensions a country selects in Step 3.

**Step 5: Integrate gender considerations in enabling legislation related to SMC.** This step involves assessment of a country's policy and regulatory framework for SMC in light of the priorities identified in the previous step. Within this context, establishing an enabling legislative framework can be an important aspect of strengthening national capacity for SMC. The existence of well-crafted enabling legislation paves the way for addressing new issues related to SMC as they arise, including issues associated with the introduction

of novel chemical substances over time as well as with the discovery of new concerns related to existing chemicals.

The following checklist includes elements that could be addressed by SMC legislation and regulations to promote gender equality and the protection of vulnerable populations.

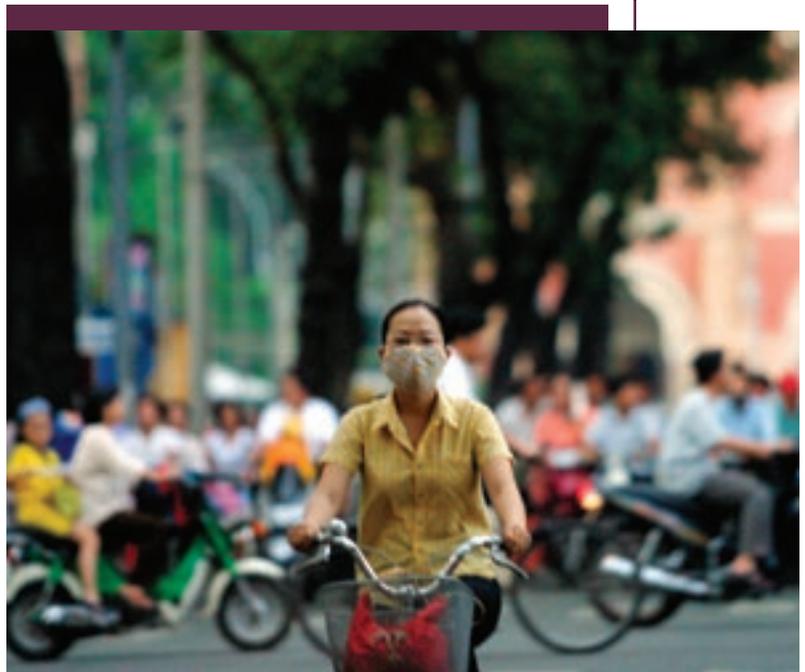
#### **Step 5 – SMC Enabling Legislation: Sample Checklist for Integrating Gender Aspects**

- ✓ Education/awareness raising and outreach on chemicals safety, risks, and management, targeted toward the general public and vulnerable populations
- ✓ Right-to-know (vulnerable populations should have easy access to information on risks, contaminated sites and/or living/working areas, prohibited or restricted substances, chemical data safety sheets, etc.)
- ✓ Workplace safety (vulnerable populations, because of their low status, exert less control over their work environment, therefore occupational health and safety and enforcement provisions should be put in place to protect them at work from chemical exposure, accidents, disasters, etc.)
- ✓ Access to health screening, poison centres, and compensation from employers (women's occupational health problems are under-diagnosed and their claims for compensation disproportionately refused; authorities should require regular health screenings and assessments as well as hold employers accountable for damage done)
- ✓ Proper labelling and classification of chemicals (will help vulnerable groups to better understand requirements for safe handling and storage of chemicals at home/work)

**Step 6: Address gender aspects of mainstreaming SMC into national strategies and plans.** Countries incorporate SMC priorities, based on the results of the previous steps, into national development plans and sector strategies. UNDP can provide assistance to partners in ensuring that this mainstreaming of SMC priorities reflects gender-related considerations. An essential element of this stage is to make sure that there is a clear understanding of how and when to seek opportunities for representation of these priorities.

### *Step 6 – Mainstreaming SMC in National Strategies and Plans: Sample Checklist for Integrating Gender Aspects*

- ✓ How do the most important national development planning processes (UNDAF, CCA, PRSP, etc.) occur (timing/cycle) relative to SMC and gender-related considerations and what/when are important decision points?
- ✓ Who are the main actors or decision makers (government and/or non-government) and who must be influenced /engaged (and how many times) to ensure taking up of SMC/ gender priorities?
- ✓ Who are important stakeholders that can support advocacy for SMC and gender priorities?
- ✓ What communication strategies and materials will be most effective to influence the stakeholders that are relevant to the campaign?



Traffic pollution in Vietnam. Urban air pollution generated by vehicles, industries and energy production kills approximately 800,000 people annually (WHO 2002)

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