This section of the Teacher's Guide includes a series of learning activities which correspond to all the chapter topics. They vary in length and complexity and will therefore be useful for different audiences. The examples which follow demonstrate the general teaching approach described in Part One.
Chapter 1: Overview

1.1. Environmental health hazards in your country

1.2. Problem-solving exercise: the impact of schistosomiasis haematobium on women in Cameroon

1.3. Student presentations
1.1. Environmental health hazards in your country

-Time: 3-5 day assignment

-Objectives:

If used before the teaching module, students will be able to:

1. Demonstrate their understanding of the relationship between environmental factors and health.

2. Provide examples of the interrelationship between socioeconomic and political factors, environment and health.

OR

At the end of the exercise, students will be able to:

1. List examples of environmental and occupational health hazards in specific country settings.

2. Identify environmental health hazards in everyday life.

-Procedures:

1. Provide the assignment on page 24 to students at the beginning, during or at the end of teaching sessions giving the overview of Basic Environmental Health.

2. Ask for 2-3 volunteers representing different jurisdictions.

3. Each volunteer schedules a meeting outside the classroom to brief those who will play the role of the government authority.

4. In the class, those who play the role of the government representatives make a 5-10 minute presentation on the environmental health hazards in the country to the other members of the class who play the participants at an international meeting. You may choose to designate specific roles for members of the audience, such as a representative from a certain political party, someone from the business community, an investigative journalist, a representative from a national environmental group, and so on. Following the presentation, the presenter responds to questions for 15 minutes.

5. Summarize the key environmental health hazards mentioned and conclude.
Alternatives

1. Review in plenary. Use buzz groups or brainstorming to generate lists of environmental health hazards, potential health effects, and socioeconomic and political factors. Follow up with discussion.

2. Divide participants into small groups to discuss:
   - common environmental health hazards, with examples from everyday life and related socioeconomic and political factors;
   - where and how to find information on the subject, and where data is missing.

3. Use the “prioritizing/planning” technique (see Chapter 12.2) to identify the priority environmental health hazards in the country (or countries) represented. Proceed to discuss the social, economic and political causes of these hazards.

4. Use the “Environmental Health Hazards Overview” Exercise (see Chapter 2.1).

Materials:

Copies of the assignment, flip chart, coloured markers, masking tape. (For small group work, provide discussion questions for the group on flip chart or worksheet.)

Assignment: Environmental health hazards in your country

You have been asked to prepare a brief internal memorandum for a government representative of your country who will soon attend an international meeting regarding environmental health hazards. She wants to know the scope and dimensions of the major environmental health hazards in your jurisdiction, the patterns of illness and the extent to which hazards and illness are linked. Try to find the information you need; if the data are incomplete, explain why. At a minimum, list the factors in everyday life that you think may be causing significant disease or injury. Regardless of the quality of the data available, you must prepare a 1-2 page background paper to help prepare the trip. She wants an honest opinion about the socioeconomic and political factors involved.
1.2. Problem solving exercise: the impact of schistosomiasis haematobium on women in Cameroon¹

⏰ **Time:** 2-3 hours

✅ **Objectives:**

At the end of the exercise, students will be able to:

1. Identify how environmental factors such as waterborne infectious diseases affect women.
2. Use gender as a critical category to analyse and propose potential solutions to a public health problem.

📝 **Procedures:**

1. Introduce the exercise and review its objectives. Divide participants into small groups (4–6 persons). Instruct participants to identify a chairperson and a recorder.

2. Distribute the problem-solving exercise and review the participants' tasks as well as the questions for discussion. Note that the information provided may, in some cases, be insufficient to draw adequate conclusions. Gaps in data should be noted in responses to questions 4 and 5. Once the exercise has been properly understood, allow participants to work in small groups for one hour (or more, if necessary).

3. Reconvene the groups and invite a response from the first group to the first question. Ask whether other groups have different responses. Summarize, and if necessary expand on, the participants' responses and proceed to Question 2. Allow a different group to initiate the discussion and continue in this way until all questions have been answered. Possible answers to the questions are provided below. The answers are not all-inclusive. Instructors are encouraged to develop alternative responses and intervention strategies that are appropriate to the local situation.

4. Summarize the results, emphasizing key messages, and conclude the exercise.

¹ Anthology on women, health and environment, 1994 (Document WHO/ EHG/ 94.11), pp.9–11
Materials:
Problem-solving exercise (Annex 4), flip chart, coloured markers.

Exercise
In a village in Cameroon, 76% of the population is affected by schistosomiasis, with slightly more women infected than men. The disease is contracted by the passage of the parasite *Schistosoma haematobium* through the skin in water. The effects of the disease can include iron deficiency and anaemia if the infection reaches a level sufficient to cause loss of blood in the urine. The infection results in loss of appetite, fatigue and weakness, along with impaired ability to carry out domestic, agricultural and parental duties.

Other potential effects include genital lesions, as well as reproductive disorders which are particularly devastating for women in the community. Marriage opportunities for those affected may be diminished since potential suitors must be informed of the infection. Many believe that the infection is a venereal disease. Married women who are infected are forbidden sexual contact until they are cured and may even be evicted from the household.

Women's infection rates are linked to their domestic and agricultural responsibilities which include collecting water, bathing children, laundering, cleaning utensils, preparing and washing foodstuffs, and farming, all of which involve regular and prolonged exposure to infected water. Inadequate sanitation and waste disposal facilities, lack of basic amenities and lack of awareness concerning sources of infection and transmission are other causal factors.

Few villagers can afford the medication needed to treat the infection. Women in particular are disinclined to seek treatment, not only because of financial limitations but also because of the social stigma associated with the disease. Its persistent recurrence fosters the belief that schistosomiasis responds neither to traditional nor western medicine. For these reasons, it is likely that urinogenital schistosomiasis infections in women are significantly underreported.

Your task is to analyse this public health problem and identify potential solutions.

1. **What are the environmental issues or problems facing women in this case?**

   They are exposed to contaminated water, and local environmental conditions are unhygienic. Accepted behaviour, attitudes and customs perpetuate the risks.

2. **What are the health effects of these problems?**

   Infection with the *Schistosoma haematobium* parasite produces symptoms and effects such as iron deficiency anaemia, loss of blood in urine, fatigue and impaired ability to carry out responsibilities.

3. **What are the underlying causes of these problems?**
   a. **Is this problem related to women’s status in society?**

   Yes. Assuming that women's infection is due to exposure to contaminated water through the performance of their domestic
duties, it is their status which determines the duties which expose them to risk.

b. Is the problem due to women's exposure to a certain hazard through performing obligatory tasks?
Yes, for the same reasons as stated above.

c. Do biological or physiological factors play a role in this problem?
Yes. If sterility or reproductive difficulties result, women are socially disadvantaged and physiologically impaired.

d. Do women suffer more from the health problem once it occurs, such as through lack of awareness of its impact on them, social stigmatization or lack of access to treatment?
Yes. Women with this disease may be severely stigmatized, whereas no stigma is attached to infected men. The stigma affects women’s ability or willingness to be treated. It also affects their ability to marry or remain married, and hence threatens their economic safety and security. Factors such as these lead to underreporting and to the conventional wisdom that young men constitute the group most exposed to risk of this disease.

4. What other information do you need to fully assess the situation?
What kind of health information is already available?
Is it gender-sensitive?
For what reasons have other groups (adolescent males) mostly been targeted for study?
Why is it thought that these groups are most at risk?
Given their traditional roles, has sufficient attention been given in the past to women's potential exposure?

5. How would you go about investigating this problem in detail?
a. What cultural/ gender issues need to be considered in planning further investigations/ studies?
In the society under investigation, what work or other activities done by women are likely to expose them to the same or greater risks than other population groups?
What is the regularity and duration of women’s exposure, during all their roles and responsibilities, compared with that of other groups at risk?
Does exposure to this risk affect women’s ability to perform their roles in other spheres?
What kind of measures could be taken to ascertain whether women are unwilling or unable to report this disease?
b. **Whom would you involve in your investigation team?**

Medical/public health personnel (to carry out health studies and determine treatment).

Sociologists or anthropologists (to clarify the sociocultural issues for all parties involved).

Community health workers (to liaise between the above two groups and the community).

Community leaders, male and female (to liaise with the above three groups and the community).

Environmental health specialists or engineers (to identify technical solutions).

6. **What can be done about the problem?**

a. **What prevention measures or campaigns would you recommend?**

Ascertain which individuals and groups are actually and potentially at risk, and why.

Carry out long-term community education work aimed at encouraging better reporting for treatment and better compliance with the treatment prescribed.

Ensure that effective and affordable medication is available.

Introduce appropriate environmental control technology.

b. **Why and how would you involve women in your prevention efforts?**

Women doctors who appreciate the cultural impact on infected women should be available for consultation and should be involved in any epidemiological or clinical studies undertaken.

Female community health workers should be available to advise and liaise with women in the community.

c. **Why and how would you involve men in your prevention efforts?**

Male doctors and community health workers should work with community leaders and heads of household to stress the importance of equal access to treatment for all family members, and to counter the belief that the infection is a venereal disease.

Men of the community should be involved in efforts to deal with water source contamination, to ensure that proposed changes are approved and to reduce the notion that water-related issues are "women's work".
1.3. Student presentations

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Time: Preparation outside of class
Classroom presentation (optional 15-60 minutes), followed by questions and discussion (15-30 minutes).

Objectives:
At the end of the exercise, students will be able to:
1. Develop a deeper understanding of specific environmental health topics.
2. Utilize interactive teaching approaches in their own presentations or teaching.

Procedures:
1. At the beginning of the course or workshop, advise students to prepare a presentation on an environmental health theme of their choice, drawn from the Basic Environmental Health text, their own research or related materials. In preparing their presentations, students must utilize one or more of the interactive approaches described in the Teacher’s Guide and demonstrated during the course. The lecture method may be chosen, but only in conjunction with other methods, such as buzz groups, brainstorming, use of audiovisual aids, case studies, etc.
2. Develop a schedule of student presentations to coincide with relevant course materials.

Materials:
Copy section on selected teaching methods from Teacher’s Guide for use by students (optional).