MODULE 2

Introduction to Ecohealth

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Contents

**MODULE 2 – Introduction To Ecohealth** .................................................................44
  Overview ..................................................................................................................44
  Conceptual Map: Module 2 .....................................................................................45
  Module Aims ...........................................................................................................46
  Why Is This Topic Important? ..............................................................................48
  Key Concepts .........................................................................................................50
  Guiding Questions .................................................................................................51
  Basic Learning Objectives ....................................................................................51
  Advanced Learning Objectives ..........................................................................52
  Practical Notes ........................................................................................................52
  Case Studies ..........................................................................................................53
  Links to Other Modules .........................................................................................55
  Background information .......................................................................................55
  Activities .................................................................................................................55
  Sample Timetable: Module 2 ................................................................................68
  Evaluation ...............................................................................................................69
  Terminology ..........................................................................................................70
  Key References .......................................................................................................71

**Module 2 – Appendix I** ....................................................................................72
  Experiencing and Negotiating Health .................................................................72
Overview

This module helps participants discover the underlying ideas, concepts, and philosophies that define Ecohealth approaches. Ecohealth is an area of research and practice as well as an evolving set of concepts. It is not a distinct discipline like epidemiology or ecology or microbiology with its own set of defining theories and methods. In some instances, Ecohealth has been interpreted as singular – that there is an ecosystem approach to health. In other instances, while the general ecosystem orientation to health issues may be singular, the approaches used to apply that orientation are multiple. Hence, some speak of ecosystem approaches to health. The terms Ecohealth, ecosystem health and/or ecosystem approaches to health are not consistently used across disciplines, perspectives, or agencies. In teaching this material, trainers need to convey this openness, while emphasizing the underlying vision, principles, and concepts that bridge many of the different perspectives on Ecohealth. Ecohealth takes theory and methods developed for a variety of disciplines and combines them in a way to deal with health issues from the perspective of socio-ecological systems. The objective of this module is to provide a common foundation of key concepts for this perspective. This introductory module should be delivered near the beginning of the course.
## Conceptual Map: Module 2

### Activity 1: Sharing experience; discussion; case studies and literature review

- **Learning Objective:** Understand the value of various perspectives and expertise and gain an appreciation of the value of engaging others when looking at health issues.

### Activity 2: Brainstorming; case studies

- **Learning Objective:** Define the “scope of practice” for Ecohealth by examining the nature of issues suited to an Ecohealth approach and recognizing the problem-framing and problem-solving (research-to-action) ethos of Ecohealth.

### Activity 3: Lecture; group work; small group discussion of scenarios

- **Learning Objective:** Discover the attributes of the Ecohealth approach, recognizing how the origins of health issues result from the relationships between different groups and variables.

### Activity 4: Develop actionable plans; group work

- **Learning Objective:** Identify the concepts and principles of Ecohealth that emerge from the module activities and develop a shared vision of Ecohealth.

### Activity 5A: Case studies

- **Advanced Learning Objective:** Adapt generic definitions of Ecohealth to a specific case study; consider who should be part of the research team and how the team members would be engaged to work collaboratively.

### Activity 5B: Group work; discussion; debates

- **Advanced Learning Objective:** Have informed debates on the settings and situations where an Ecohealth approach is (or is not) likely to provide effective options for dealing with a health issue.

### Activity 6: Discussion; instructors work as peers

- **Learning Objective:** Apply general concepts, principles, and approaches discovered in the class so far and apply them to a specific case to start building skills in planning and applying an Ecohealth approach.

### Trainer Review
Module Aims

This module suggests a set of activities that will allow learners to develop, together with their fellow participants, a defensible conception of Ecohealth. The activities will provide trainers with a detailed outline for organizing a class that can be customized to local conditions. The module has been organized to illustrate some adult teaching methods that can help new trainers develop Ecohealth teaching skills.

**The module also helps you as trainers to identify strategies and options for teaching Ecohealth by reflecting on the teaching approach used in this module (Activity 6). This process can be carried out after each day or set of activities.**

The module enables you as the trainer to provide learners with a shared understanding of the core concepts and principles of Ecohealth. This will provide a common language and basis to support the remainder of the course. These include:

- The need to see health as the product of a web of social and ecological interactions over time
- The importance of considering the experience, information and values of different disciplines, different communities and different people, introducing concepts such as transdisciplinarity and participation
- The understanding that health risks and benefits are not experienced equally across social groups or across species
- The introduction of concepts of social and gender equity and conservation
- The underlying emphasis of Ecohealth on effecting positive change, including the concept of knowledge to action.

The module also allows you to demonstrate how Ecohealth approaches can be applied in a way that is relevant to the learners. This will help learners understand the types of issues or situations for which an Ecohealth approach has advantages and disadvantages, and gain a personal understanding of how to frame a situation from an Ecohealth perspective, and the advantages of this approach.

Learners often quickly embrace the concepts of Ecohealth but remain frustrated until they understand why and how they can be used. This module will emphasize self-discovery of core Ecohealth concepts and principles by taking advantage of the experiences of the trainers and learners in dealing with local issues. By using cases or situations with which the learners already have some familiarity, the trainer will not need a prolonged introduction to case studies and learners will be more focused on the Ecohealth concepts and principles. This should give learners a better opportunity to apply and reflect
on Ecohealth ideas in situations for which they have some background knowledge and to see connections between Ecohealth and locally important issues.

**Overall, this module allows you as the trainer to introduce learners to the shared concepts, principles, and philosophies that bind Ecohealth together as an approach.** Two ways to meet this goal are:

1. Present learners with a summary of the foundation concepts and principles in the form of lectures, discussion, or other forms of presentation. The trainer is then responsible for summarizing the current literature and presenting this information. The principles and concepts can be illustrated by case studies or embellished by discussion with the learners. This approach is focused mainly on transmitting factual content to ensure learners have been exposed equally to some key pieces of information or definitions to help them develop the foundational understanding (which includes terminology) needed to progress through subsequent modules. This form of teaching suits less experienced trainers and learners who will have less opportunity to have more prolonged and interactive discussion. Trainers can refer to the references given throughout the modules to extract the content to transmit, using module-specific learning goals to identify the important issues.

2. A second option is to develop activities to help learners discover the core concepts and principles through interactive teaching and discussion. The teacher’s role is as trainer and guide to help learners consolidate their observations and insights along core Ecohealth themes. The goal is less about transmission of a set of concepts than having learners develop an understanding of Ecohealth principles, including some of the reasons and needs for concepts. The trainer should be proficient in Ecohealth ideas and experienced in interactive teaching. The risk in this approach is that all learners may not discover the same concepts and this can be a problem if the concepts and principles cannot be further reinforced through subsequent learning opportunities. This risk can be reduced by having teacher-led summaries to ensure equivalent exposure of learners to an overview of key ideas. This approach allows the teacher to model Ecohealth principles (e.g. dialogue, participation, using multiple perspectives) and provides a foundation for learners to focus less on factual details and more on discovery of an approach to learning, research, and practice.

This module has been developed to support a teaching style focused on the learner and on self-discovery. Research in education has shown that students can learn more effectively when actively involved in the learning process. Whatever style is used, it is important that instructors clearly summarize learning goals, and identify ways that those goals are achieved.
Why Is This Topic Important?

Ecohealth represents a way to approach complex health issues. It strives to look at multiple perspectives at multiple levels of organization to find ways to protect and promote health through collective action of researchers, regulators, and citizens. An Ecohealth approach thinks about health outcomes as phenomena that arise from the interactions and relationships between social and ecological systems. The approach focuses research and management efforts into factors that act as the root causes of illness and health. These are sometimes referred to as “upstream” factors, “causes of causes,” or, more generally, “determinants of health.” If we use the upstream-downstream analogy, then “downstream” factors would be those that deal with treatment and rehabilitation of adverse health outcomes like poor nutrition and disease. In the following diagram, upstream factors are located in the “etiologic phase” of a disease, while downstream factors are found in the clinical and post-clinical stages.

This metaphor can be very useful. However, learners need to be reminded that, in a complex ecosystem, over time “downstream” factors influence “upstream” factors, both positively and negatively. In the accompanying diagram on the clinical course of a disease in individuals, this is shown by the fact that the flow chart both begins and ends with connections to determinants of disease.

The situation is complicated when we think of interactions between individuals, communities, and social-ecological systems. Draining a swamp might prevent malaria but may also have other, less beneficial consequences to sustainable health. Equitable access to treatment may facilitate equity more generally, which in turn improves community health; on the other hand, certain drug treatments may be effective in treating individuals, but may also result in changes in disease resistance and access to treatment, and may make the health situation worse over time. Furthermore, some factors, such as nutritional status, may be components of health, and also influence other components, so that they are upstream from some aspects of health and downstream from others. Disease conditions may influence ability to work, as well as social status, and thus be upstream from the kinds of resilient and equitable communities we wish to promote. The situation is thus not at all as linear as it initially sounds. The recognition of these interactions leads to an understanding of complexity and systems, which are addressed in subsequent modules. Such “unintended” consequences are properties of systems, components, and processes that interact in uncertain and complex ways, and they create complex, messy problems often called “wicked” problems by social planners. In this manual, the terms wicked problems and complex problems will be used interchangeably. Even if the world we inhabit is full of complex interactions, we need to start somewhere to improve the problematic situations with which we are faced. Strategies and options to deal with them can be clarified if we have a better understanding of systems concepts, particularly those having to do with interrelationships, perspectives, and boundaries.
Although generally rooted in linear thinking and short time-frames, the notion of webs, upstream, and downstream factors is a useful starting place, particularly for those working in public health or environmental planning. The message that the metaphor gives us is one of intervention – to prevent downstream cases, intervention (often the domain of health prevention and health promotion) is directed towards upstream causes. This shifts the formulation of the “problem” away from a central theme of how to cure the sick (which of course remains important), to something much broader, working together with community members and colleagues to promote healthier, more resilient, social and ecological conditions.

**CLINICAL COURSE OF A DISEASE: PRE- AND POST-DISEASE STAGES**

![Figure 2.1: Diagram from the Association of Faculties of Medicine of Canada.](http://phprimer.afmc.ca/Part1-TheoryThinkingAboutHealth/Chapter2DeterminantsOfHealthAndHealthInequities/Riskfactors)

As suggested, understanding this idea of social and ecological interactions that act “upstream” of health outcomes (however defined) is an important entry into understanding Ecohealth approaches. This module is dedicated to helping learners see health as a socio-ecological phenomenon informed by a wide suite of facts, values, and perspectives. Once this is understood, and after a deeper introduction to systems thinking, participation, collaboration, sustainability, and equity, learners can be asked how treatment and rehabilitation (downstream factors) influence health outcomes, both negatively and positively, often in unintended ways.
Key Concepts

KEY CONCEPT FOR THIS MODULE

Health is determined by a variety of social and ecological factors that are interacting, interdependent, and interrelated. (Such a set of complex relationships makes up a system.)

KEY PRINCIPLES TO EMPHASIZE IN THIS MODULE

1. By looking at the interactions and relationships within this system, new insights can be gained into how to protect and promote health by influencing root social and ecological causes of health outcomes (upstream factors).

2. Ecohealth provides a way of thinking about health from a systems perspective; by taking a systems view, learners can also consider how addressing root causes can have unintended consequences.

3. Resolving health problems or protecting health capacity, as well as anticipating unintended consequences, requires multiple disciplines and perspectives (including community) working together.

4. Ecohealth has an emphasis on knowledge to action.

5. Because every outcome (change in health status) is also a determinant of other outcomes, health is never achieved “once and for all,” but is continually renewed over time.
Guiding Questions

1. What are some of the different definitions of health, and what perspectives influence these different definitions?
2. How do dominant ideologies influence societal approaches to health?
3. In an Ecohealth approach, what do we mean by determinants of health? How might this differ from how a public health professional thinks about them?
4. What are the conceptual links between determinants of health in an Ecohealth approach and a socio-ecological system?
5. What kinds of issues are best suited to an Ecohealth approach?
6. Have you encountered situations that might benefit from an Ecohealth approach? If so, how does the Ecohealth approach help you define/frame the problem differently?
7. When we think of socio-ecological relationships, can we be confident that the benefits of an Ecohealth approach will be distributed evenly or equitably? What about the risks? How do the distribution of benefits and risks relate to how determinants are viewed?

Basic Learning Objectives

After completing this module, learners will be able to:

1. Understand the value of various perspectives and expertise and gain an appreciation of the importance of engaging others when looking at health issues.
2. Learners are able to define the “scope of practice” for Ecohealth by examining the nature of issues suited to an Ecohealth approach and recognizing the problem-framing and problem-solving (research-to-action) ethos of Ecohealth.
3. Discover the attributes of the Ecohealth approach, recognizing how the origins of health issues result from the relationships between different groups and variables.
4. Identify the principles of Ecohealth that emerge from the module activities and develop a shared vision of Ecohealth among the learners and instructors from which the rest of the course can be built.
5. Apply general concepts, principles, and approaches discovered in the class so far and apply them to a specific case to start building skills of planning and applying an Ecohealth approach.
Advanced Learning Objectives

Advanced learners will be able to:

1. Adapt generic definitions of Ecohealth to a specific case study, consider who should be part of the research team and how the team members would be engaged to work collaboratively.

2. Critically discuss the definitions and core components of Ecohealth based on past experiences and debate if/how those definitions and attributes should evolve to meet local needs and perspectives.

3. Have informed debates on the settings and situations where an Ecohealth approach is (or is not) likely to provide effective options for dealing with a health issue.

Practical Notes

Ecohealth is not a single discipline or approach but rather a suite of approaches unified by their focus on looking at health as a system of interactions between social and environmental factors influencing health outcomes. While Ecohealth has been described in terms of principles and pillars which are central to its practice, there is no single right way to do Ecohealth and no single right way to teach it. There are many ways to adapt and apply the principles, theories, methods, and concepts associated with an Ecohealth approach; the specific combination will vary from problem to problem and place to place. This results in the need for learners to contribute their understandings from their own local situations, as well as for Ecohealth teachers to have a good understanding of the unifying principles, concepts, and philosophies of Ecohealth so that they can adapt them to specific teaching needs, audiences, and situations. It is critical, therefore, that Ecohealth teachers have taken sufficient time for self-teaching and experiential learning so that they have a firm understanding of these unifying concepts and can apply and adapt them confidently in a teaching situation. Throughout these modules, references are given to some key texts and papers that can serve as a foundation for this self-learning, but they should not be considered an exhaustive list. Practical experiences and self-directed learning are needed to help teachers mobilize their lessons into teaching insights.

This section requires significant interaction between the learners and instructors, so larger classes may need to be broken into smaller working groups. Ideally groups smaller than 20, but of at least five are best for generating ideas and material.

Ideally, some of the learners and teachers should have experience in dealing with health issues under field or community conditions (i.e. not just in
laboratory or clinical settings). This experience can be theoretical (e.g., graduate students) or practical (e.g., practitioners). Note that health is defined broadly in this module and is conceived of as relating to the well-being of people, animals, or environments. Therefore, many disciplines have insight into health issues (see key references below). For learners with no health experience, pre-reading the key references for this module is strongly encouraged.

It is best to have learners from a variety of backgrounds in the class (i) to model the collaborative approach of Ecohealth that strives to learn from and integrate various perspectives and disciplines and (ii) to avoid having a group of learners all with similar training and life experiences because this will not expose the learners to the core learning goal of the value of integrating multiple perspectives and skills when using an Ecohealth approach.

Some activities, such as a course introduction and “ice-breaking” activities, should precede this module to allow the instructors and learners to become familiar with each other and to feel comfortable having group discussions.

Case Studies

Case studies have an important role in developing learner skills and knowledge as well as increasing learner motivation and interest in a subject. Learning from practical and tangible examples is a very useful way to help participants understand the complexity of Ecohealth.

In the simplest terms, case studies are learner-centred activities that demonstrate theoretical concepts in an applied setting. In general, they require a description of the context of the problematic situation (locations, people and/or animals involved, when it occurred, why people were concerned, etc.); identification of the issue to resolve or decision to be made (framing the problem statement); and supporting information ranging from data, websites, site visits, interviews, images, videos, and/or documents.

A good Ecohealth teaching case has several features:

- It provides a “real world” context to help learners see how the course material applies outside the classroom and see how data are often ambiguous or not clearly defined in many situations.
- It exposes learners to different perspectives (viewpoints from multiple sources) and shows that different people may want different outcomes.
- It shows how an Ecohealth approach will define the problem differently from any one of these other perspectives.
- It reveals how a decision will affect different participants, both positively and negatively.
- It requires some critical thinking and integration of multiple sources of information and perspectives.
Things to consider in selecting a case study for this module:

- Will the case used in this module be used across all modules?
- Using a shared case across modules allows instructors to cover specific issues in more depth.
- If a case is shared, for this module, more emphasis can be placed on getting the participants familiar with the context of the issue than in examining all relevant Ecohealth principles at once.
- If each module has its own distinct case studies, each case study should be selected to reinforce one another and not seem redundant to learners.
- Adult learners learn best when they can see the application of what they are learning; therefore, case studies should be selected to ensure they are relevant to participants.
- Because Ecohealth is a complex topic, the instructors should be well versed in the details of the case studies in order to draw out the higher-level Ecohealth principles.

Resources and time restrictions will dictate if the case studies involve travel outside of the classroom, inclusion of guests such as stakeholders, and ability for learners to collect data on their own. When time and resources are limited for travel and guests, instructors will need to put in significant effort in advance to gather the required information, images, and data to effectively use the case study.

This module has been written on the assumption that there will be a case study used in several modules, allowing the learners time to revisit and reflect on the case. Therefore, the emphasis of this case study is to have the learners be able to identify and understand the link between what in conventional terms are called “upstream factors” and what information is required to fully describe the context of the case and the issue. If this assumption cannot be met, instructors are encouraged to replicate the field trip by a rich description of a local case through video, slides, and guests who can provide context on an Ecohealth issue in the classroom.
Links to Other Modules

As an introduction to Ecohealth, this module is ultimately linked to all other modules. It is important to coordinate with teachers of other modules to ensure any overlaps are reinforcing and not redundant, and to make sure there are no critical gaps. It is assumed that all trainers using this manual will be able to teach this module as well as at least one other module (see Trainer Competencies in Introduction to the Manual).

Background information

Teaching the introduction to a course requires some of the best teachers in order to effectively facilitate, integrate, and explain the complexity of Ecohealth in a way that is clear and not confusing. All instructors must be very familiar with the information provided in these two references as a minimum for teaching this module:

- Public Health Agency of Canada website on “What Determines Health.”


- Some information on teaching based on case studies can be found in the following websites:
  http://ltl.its.psu.edu/suggestions/cases/index.html

Activities

As this is the introductory module, the instructors should take the time to introduce themselves and their goals for the course and this module.

1. It is valuable to have all the core instructors from other modules present at this introduction as well.

2. Class members can be asked what they hope to gain from the course and to introduce themselves.
Activity 1

Learning Objective:

- Understand the value of various perspectives and expertise and gain an appreciation of the value of engaging others when looking at health issues.

Training focus

Teaching activities should help learners take the general idea that “it is good to work with others” and start to discover tangible examples within their sphere of experience on the breadth and diversity of experience and perspectives that could be brought into Ecohealth problems.

Examples of ways these can be achieved:

- Have learners share experiences where they have found a multi-faceted collaborative approach to be useful.
- Describe situations to the learners where you have found a multi-faceted collaborative approach to be useful.
- Review with learners some key case studies and literature that involve multiple disciplines, as well as collaborations with non-academic community members (transdisciplinarity).

Bring a health practitioner, community member and/or other stakeholders to describe how a collaborative effort led to improvement of community health or resolution of a health-related problem.

INSTRUCTIONS

1. Start the course with a round table of introductions. Focus on asking participants to explain their background and what they see as their expertise, and to identify at least one experience where working with someone with a different expertise challenged them and/or helped them (personally or professionally).

2. The module on approaches to teaching Ecohealth can provide some guidance on how to help learners connect their experiences with Ecohealth as well as with the experiences of other learners to show how skills and experiences can be complementary and help to broaden perspectives and capacity to deal with health issues.

ALTERNATIVE ACTIVITY

1. As above, start the course with a round table of introductions. Focus on asking participants to explain their background and what they see as their expertise, and to identify at least one experience where working with
someone with a different expertise challenged them and/or helped them (personally or professionally).

2. Break the learners into groups and have them develop definitions of health from the perspectives of different people, species, and scales. Refer to the “Define and Negotiate Health” activity for instructions and a discussion guide for this, in Module 2 – Appendix I – Experiencing and Negotiating Health.

3. As described in the appendix, bring the discussion back to the full group to debrief how they found the different perspectives helpful or challenging, and how it might have highlighted the need for different skill sets.

This activity can have a profound impact on the way participants think about health.

ALTERNATIVE ACTIVITY

- Have the learners pre-read a paper that focuses on the necessity of transdisciplinarity in Ecohealth and ask them to relate the paper to their experiences where similar approaches have or have not worked. Have them talk about what they mean by “worked,” and whether others might have a different view of what “works.”

Sample papers:


Activity 2

Learning Objective:

- Define the “scope of practice” for Ecohealth by examining the nature of issues suited to an Ecohealth approach and recognizing the problem-framing and problem-solving (research-to-action) ethos of Ecohealth.

Training focus

Help learners recognize the characteristics of complex problems and create an understanding of the types of problems and issues for which an Ecohealth approach may or may not be suited.

Examples of ways these can be achieved

- Class brainstorming session in groups on a “messy” health issue (complex or wicked problem) they are familiar with, with trainers facilitating a collaborative framing of the problem and summary of cases to define shared features relevant to Ecohealth.
- You can present summaries of published case studies, such as in Charron et al. 2012 and work with the class to find commonalities.
- Assign learners well-documented cases before class and ask them to come prepared to summarize the main features of the cases for discussion in class.

INSTRUCTIONS

1. Have the learners come to a blackboard or flip chart and write issues or problems that they think would be suited for Ecohealth (e.g. rural water safety, nutrition) and next to it write a reason why this might be a good case study.

2. Review with the class the commonalities between the problems and start a list of defining features.
   
i. Draw out some of the key features that will later help to define an Ecohealth approach (e.g. it is a complex health issue with multiple perspectives, values, and stakeholders involved, where there may not be an agreement as to what constitutes the “problem”).

   ii. Select a few of the case studies for the next session (the number needed depends on the group size).
ALTERNATIVE ACTIVITY

1. Have ready a series of papers, technical reports, or book chapters in which the Ecohealth approach has been applied. These can come from the Manual Companion Texts. Ask the participants to read the papers and develop a description of the health issues involved, emphasizing the nature of the setting and context, who was involved, and how the problem was defined.

   i. You should not prejudice the learners by directing them to look for key features, but instead, facilitate a review or discussion of the learners’ discoveries and thoughts after reading the papers and to help cluster those thoughts into Ecohealth themes.

   ii. Pre-select papers to reflect the diversity of settings in which Ecohealth can be used.

   Examples include:


Activity 3

**Learning Objective:**

- Discover the attributes of the Ecohealth approach, recognizing how the origins of health issues result from the relationships between different groups and variables.

**Training focus**

Help learners to recognize the connections between the various drivers and determinants that affect an Ecohealth problem and begin to see relationships between these factors in terms of a connected and interacting system.

**Examples of ways these can be achieved**

- Instructors provide a lecture on the socio-ecological approach to health issues.
- Group work to have learners develop relationship diagrams and maps, such as causal models for locally relevant health issues. Instructors circulate asking probing question to help learners see the “upstream drivers.”
- Learners are to provide scenarios and asked to examine them in small groups, each group taking a disciplinary perspective. The groups are brought together to examine:
  
  i) How different are the strengths and weakness of disciplinary approaches, and
  
  ii) How can combining the information from different perspectives and disciplines reveal some new options for primary prevention or health promotion.

**INSTRUCTIONS**

1. Begin by selecting two or three case studies developed in the preceding activities that would (i) be suited for this activity and (ii) are relevant to the participants (e.g. reflect local issues). Additionally, try to find commonalities between issues raised in groups in the preceding activity because this would allow you to choose examples for which more learners have experience. Because the goal of this exercise is to develop diverse causal webs, rather than to look at the content per se, it will help if a number of the learners already have some content expertise. You should ensure you have two or three of your own examples to use in case good examples did not arise in the last activity. You should have ready a background document on the cases and try to select cases that have some local/regional prominence so the class members have some familiarity with the issues.
Introductory information on causal webs can be found at:
http://www.vetmed.wsu.edu/courses-jmgay/EpiMod2.htm
The Causal Web Project


2. Find the “entry point.” In other words, ask the class how/why they got involved in the problem. Note that an entry point can be a clinical case, a request/complaint from a stakeholder, a political inquiry, or similar events that first get someone interested in looking at the issue.
   - Write this entry point on a blackboard or a large piece of paper.
   - Repeat this for each case study.
   - If the examples used are ones provided by you, work with the class to develop a list of hypothetical entry points for each example and select the one most similar to the real entry point.

3. Break the class into groups; one group per example.
   - Have each group draw a causal network expanding from this entry point.
   - Help by prodding people to look at upstream factors that influence points in their network as well as to look at how different nodes in the network influence or affect each other.
   - The instructors will move between the groups, facilitating (but not leading) discussion to encourage learners to discover the various nodes in this network and to find the connections between causal factors.
   - Ensure the participants have plenty of space and paper to expand their networks.

4. After the original groups have drawn their network, ask them to describe it to the class.

5. Then, allow the groups to wander between each other’s diagrams, inserting comments with “sticky notes” that will help to expand or contract different relationships and nodes in the networks.

6. During a break ask the group to consider the following:
   - What are the problems identified in each of the diagrams and how do they differ (or not) from the entry point?
   - Who has influence on the nodes and relationships diagrammed in each example?
   - Has drawing the causal network caused you to think differently about the nature of the problem you started with?

7. Ask the group to reconvene and discuss the questions.
ALTERNATIVE ACTIVITY


1. Ask groups to critically review the case studies. In their critical review, ask the participants to try to differentiate the approach taken in the case studies from other possible disciplinary approaches or methodological approaches to the problem. Can they see how the “problem” is defined differently?

2. Ask learners to describe the different factors studied, the groups involved, the activities undertaken and how these all relate to each other.

3. Ask learners to identify a problem in their jurisdiction that would fit the approach illustrated in the case study.
   - Who would be the equivalent groups who took part in the local study?

Activity 4

Learning Objective:

- Identify the concepts and principles of Ecohealth that emerge from the module activities and develop a shared vision of Ecohealth.

Training focus

Link the concepts of an interacting system of variables that affect an Ecohealth problem with the need to use multiple methods and incorporate diverse knowledge and perspectives to develop actionable plans. Identify the principles of Ecohealth that emerge from the module activities and develop a shared vision of Ecohealth among learners and instructors on which the rest of the course can be built.

Examples of ways these can be achieved

- Instructors can give a summary lecture that draws on standard textbooks or manuscripts that provide certain authors’ opinions of what defines Ecohealth.

- The class can work as a group(s) to distil the day’s activities and develop their own definition of Ecohealth. Those concepts can be shared and the instructors can identify the core concepts with learners. From the concepts, groups can determine the principles.
• Participant homework can be to reflect on the day’s activities and ask how the concepts identified compare to standard definitions or descriptions of Ecohealth provided in assigned readings.
• Participants, as a group, draw a diagram or concept map of Ecohealth that does not need to be reviewed or critiqued in class, but can be continually re-visited after other modules so that, by the end of the course, learners have a well-developed understanding of Ecohealth.

INSTRUCTIONS

1. Using learnings from activities 1 to 3, work as a large group to extract the common features from the case studies.

2. Seek commonalities in the nature of the study and the scope of people/settings involved in the issues.

3. Facilitate the discussion to help learners categorize these commonalities in terms of the core concepts and principles of Ecohealth. For example, systems view, multi- to transdisciplinarity, participation, social factors such as gender and equity, sustainability, and knowledge to action.

4. You can next share a history of the origins of Ecohealth and help to bring the day’s activities into a unified vision.

Options for this activity:

Option 1: You can provide a lecture on the origins and evolutions of Ecohealth, resulting finally in an integration of the day’s work demonstrating how the learners identified key concepts.


Option 2: Provide summaries of key advances in systems approaches to health issues for the learners to read and give feedback to the class summarizing the main aspects of Ecohealth. Introductory papers and websites can be used.

ALTERNATIVE ACTIVITY

1. During the break, you can highlight the common themes in the learner networks to draw out the key elements of Ecohealth.
   • Guide learners through their review to describe why they selected these key elements and why these elements contribute to the Ecohealth approach.

2. Give a summary lecture to bring together the day’s activities by introducing the origins of Ecohealth and current status and concepts of its practice.
3. Whichever activity is selected, this is a good time to create a poster that can remain up in the classroom. The poster would give a definition of Ecohealth and list its concepts, principles, and approaches. The poster can be re-visited at the end of each day to review if the class’s conception of Ecohealth changes as they progress through the course. At the end of the course, the poster will be finalized through group discussion and by linking to core lessons from previous modules. Learners can take copies away with them.

Activity 5A

Learning Objective:

- Apply general concepts, principles, and approaches discovered in the class so far and apply them to a specific case to start building skills in planning and applying an Ecohealth approach.

Training focus

Help learners take their new theoretical or intellectual understanding of Ecohealth concepts and principles and apply them to a case study to see their practical applications. Demonstrate the concepts and theory discussed in the module to date in an applied setting to help learners reinforce the learning outcomes of the previous activities in this module.

Examples of ways these can be achieved

- Learners visit the FIELD STUDY site for a course case study and are introduced to the location, stakeholders, and problems and are asked to provide their initial impressions of how concepts and principles developed in this module might apply.
- Instructors give a multimedia presentation on a case study, discussing with the learners where or how Ecohealth concepts and principles might be applied.
- Instructors present a series of case vignettes (such as presented in Charron et al. 2012) and highlight how the core concepts and principles identified in class proved to be valuable.
NOTE TO INSTRUCTORS

This activity is an extension of the last activity and is intended to help learners take the theoretical or intellectual understanding of Ecohealth concepts, principles, and approaches and apply them to a case study to help them see the practical applications. If time is limited and a field trip cannot be organized, the alternative activity listed next may be more efficient. If the introductory module is held over a very short time, precluding the use of a detailed case study, it will be important for instructors to highlight the practical implications of the Ecohealth core concepts when undertaking the previous activities.

INSTRUCTIONS

Before the course begins, you should identify the case studies you wish to explore by field study or field trips. One of the field studies can be introduced at this point.

Learners will visit the field site for a course case study.

1. Refer to Using and Developing an Ecosystem Approach to Health Case Study in your Teaching: ecohealth.vetswithoutborders.ca to plan your visit. Consider the ethical implications of a field study, in terms of research ethics and the impact that your visit will have on the system you are studying. Prepare your field visit carefully and consider all aspects of risk management in your planning.

2. Case studies should provide exposure to locally relevant issues. Trainers should be familiar with the key stakeholders and communities involved, including regulatory authorities, and should secure all necessary agreements, ethics approvals, and risk assessments for this to be used as a case study. The case should allow the trainees to see multiple perspectives and should not be restricted to one discipline’s approach to characterizing the case or its management. Practical considerations such as accessibility, how long it takes to travel to the case study site, and trainee safety need also be considered.

3. Learners will be introduced to this teaching case study as it exists in the field. Learners will be provided with an opportunity to meet with some local stakeholders (preselected and recruited by the instructors to help reflect key local perspectives); see the affected community; meet some community members; and see the local environment. They will be shown (or told) about the entry point for this issue.

4. After this field introduction, learners will be given time to talk among themselves to discuss how they think the Ecohealth approach would apply to this situation.
• Participants meet with the instructors to reflect on their assessment.
• Learners will be tasked with a homework assignment of nominating what they would do in the first two weeks if they were responsible for developing an Ecohealth approach to the case study.
• Encourage learners to work as a group – ideally giving them time in the field at the end of the day to do so.

ALTERNATIVE ACTIVITY

You can use a multimedia approach to describing in rich detail the field site for the case study.

• Bring some stakeholders and community members to the classroom to allow the learners to talk with them and to:

  (i) See the problem from multiple perspectives
  (ii) See how various disciplines or perspectives affect how the health issue is conceived or how actions are prioritized
  (iii) Practice communicating outside their own discipline.

The remaining time is used as above but within the classroom setting.

Activity 5B

Learning Objective:

• Apply general concepts, principles, and approaches discovered in the class so far and apply them to a specific case to start building skills in planning and applying an Ecohealth approach. This is a repeat of Activity 5, but is repeated when the class is finished.

Advanced Learning Objective:

• Adapt generic definitions of Ecohealth to a specific case study, consider who should be part of the research team and how the team members would be engaged to work collaboratively.

Advanced Learning Objective:

• Have informed debates on the settings and situations where an Ecohealth approach is (or is not) likely to provide effective options for dealing with a health issue.

Training focus

Help learners take all the material they have learned in the course and apply it to a case study to see practical applications. Demonstrate the concepts and theory discussed in the course in an applied setting to help learners reinforce the learning outcomes of the previous activities in this module.
At the end of the course, have the participants consider the ways in which the modules they have covered change their understanding of Ecohealth, and of the case itself. In what ways do considerations of collaboration, transdisciplinarity, equity, systems, sustainability, and knowledge to action alter their understanding of the situation? Learners may be divided into groups according to the various modules, and then brought together to present their findings.

As a larger group, they can then be facilitated to integrate their new insights and implications of these for research and practice.

- Further activities can be developed to address the advanced learning objectives:
  - Critically discuss the definitions and core components of Ecohealth based on past experiences and debate if/how those definitions and attributes should evolve to meet local needs and perspectives.
  - Have informed debates on the settings and situations where an Ecohealth approach is (or is not) likely to provide effective options for dealing with a health issue.

### Activity 6

**Trainer Learning Goal:**

- Identify strategies and options for teaching Ecohealth to adults by reflecting on the instruction approach used in this module.

### NOTE TO INSTRUCTORS

This activity is for trainers to debrief and reflect on the teaching and learning approaches used during training. It is an opportunity to critique, develop, and explore instruction methods to best illustrate foundation Ecohealth concepts and principles.

### Training focus

As a debrief after instruction, instructors work as peers to discuss the value and challenges of the various learning activities and to explore alternative ways to meet the learning goals and teaching foci presented to help subsequent trainers adapt the module to future instruction situations.

### INSTRUCTIONS

1. As a group, you should reflect on the day’s activities and discuss the advantages and disadvantages in terms of helping adult learners to understand Ecohealth.
• This is designed as a “learning by doing” exercise that will model an approach to Ecohealth. This session allows for critical evaluation of the particular approach.
• During this evaluation, instructors can discuss the day’s/class’ learning goals and discuss alternatives.
• Instructors can also discuss this openly with learners as a way of asking for feedback on alternative methods to meet those goals.

Sample Timetable: Module 2

<table>
<thead>
<tr>
<th>TIME</th>
<th>INTENSE SHORT COURSE (1 DAY)</th>
<th>LONGER COURSE (1.25 DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30-09:15</td>
<td>Introduce goals and objectives</td>
<td>Introduce goals and objectives</td>
</tr>
<tr>
<td>09:15-10:00</td>
<td>Round table discussion on experiences with collaborative work</td>
<td>Round table discussion on experiences with collaborative work</td>
</tr>
<tr>
<td>10:00-10:15</td>
<td>Pick case studies for causal networks</td>
<td>Pick case studies for causal networks</td>
</tr>
<tr>
<td>10:15-10:45</td>
<td>Draw causal networks</td>
<td>Draw causal networks</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>11:15-11:45</td>
<td>Review networks for commonalities</td>
<td>Review networks for commonalities</td>
</tr>
<tr>
<td>11:45-12:30</td>
<td>Link morning activities to the history of Ecohealth activities</td>
<td>Link morning activities to the history of Ecohealth activities</td>
</tr>
<tr>
<td>12:30-13:15</td>
<td>Lunch (including local representatives of the case study)</td>
<td>12:00-12:30 – Travel to field site</td>
</tr>
<tr>
<td>13:15-13:45</td>
<td>Instructors introduce study and describe field setting in terms of (i) the case/issue and (ii) the environments involved</td>
<td>12:30-13:00 – Finish lunch</td>
</tr>
<tr>
<td>13:45-14:45</td>
<td>Meet with and talk with local representatives to develop an understanding of the social environment</td>
<td>13:00-14:45 – Walk around the case study site to explore physical aspects (built and natural environments)</td>
</tr>
<tr>
<td>14:45-15:15</td>
<td>Allow learners to talk with each other and local representatives to develop an outline for a plan to approach the case study</td>
<td>13:45-14:45 – Meet and talk with local representatives to develop an understanding of the social environment</td>
</tr>
<tr>
<td>15:15-15:30</td>
<td>Break</td>
<td>14:45-15:30 – Allow learners to talk with each other and local representatives to develop an outline for a plan to approach the case study</td>
</tr>
</tbody>
</table>
Class discussion on (i) the Ecohealth features of the case and (ii) the people who would need to be engaged to understand, study, and manage the issue, and (ii) ideas on first steps towards applying the Ecohealth approach

Review the day’s activities to identify and discuss methods for teaching Ecohealth

Review yesterday’s activities to identify and discuss methods for teaching Ecohealth

**Day 2:**

<table>
<thead>
<tr>
<th>08:30-09:30</th>
<th>Class discussion on (i) the Ecohealth features of the case and (ii) the people who would need to be engaged to understand, study, and manage the issue, and (iii) ideas on first steps towards applying the Ecohealth approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30-10:30</td>
<td>Return to the classroom</td>
</tr>
</tbody>
</table>

**Evaluation**

1. Evaluate pre-existing Ecohealth knowledge.

   The morning exercises will allow the instructors to identify the depth, breadth, and diversity of pre-existing understanding of Ecohealth concepts and thus allow them to adjust and refine what is emphasized in the rest of the module and course.

2. Evaluate the development of Ecohealth knowledge and understanding as the class continues and at the end of the class.

   The Ecohealth concepts and principles poster developed earlier will be a living document that the class can continue to edit, add to, and refine over the course of the class. Instructors should review the poster at the end of each day to identify any misconceptions, lack of understanding, or missing key concepts or strengths of the class, and adjust the remainder of the course.

3. Ask the learners to provide a one-page reflection at the end of this module on the top three challenges they perceive will exist in teaching Ecohealth and how they might deal with those challenges.
NOTE TO INSTRUCTORS

Trainers can evaluate their success by keeping a notebook that records the activities and instruction approaches they felt worked best each time they offered the course. The characteristics of their target learners should also be recorded for each class. The trainers can periodically find approaches and activities that consistently allow the learners to meet their goals. It is really important that instructors and trainers reflect on the success or otherwise of activities of the day, including how individuals have contributed and whether particular group configurations in the class are worth keeping for the next modules.

Terminology

Concept
An abstract idea; an idea or mental image that corresponds to some distinct entity or class of entities, or to its essential features.

Ecological system
A systemic description of living organisms (people, plants, animals, and microorganisms), their physical surroundings (e.g. soil, water, air), and the interactions and natural cycles that sustain them. Also known as an ecosystem.

Equity
The state, quality, or ideal of being just, impartial, and fair.

Etiology
The cause or origin of a disease; the study of disease causation.

Health
For definitions of health, see Chapter 1 in Charron 2012. Also see Module 2 – Appendix I – Experiencing and Negotiating Health.

Participatory (specifically, in research)
Marked by, requiring, or involving active engagement by those who will be affected by the research, or who are affected by the outcomes being investigated, as well as the researchers, in the design and implementation of the research.

Principle
A proposition that serves as the foundation for a system of belief or behaviour or for a chain of reasoning; a general scientific theorem or law that has numerous special applications across a wide field.
Social system
The people in a society considered as a system organized by a characteristic pattern of relationships. Social organization based on established patterns of social interaction between different relationships, regulated through accepted norms and shared values.

System
A group of interacting, interrelated, or interdependent elements forming a complex whole.

Transdisciplinary
A research strategy that crosses many disciplinary boundaries to create a holistic approach. It is also used to signify a unity of knowledge beyond disciplines.

Key References


Public Health Agency of Canada website on “What Determines Health.”


Additional References

Parkes et al. (2008). Ecohealth and watersheds: ecosystem approaches to re-integrate water resource management with health and well-being.

http://mahider.ilri.org/bitstream/handle/10568/5403/TrainersManual_c ontent.pdf?sequence=1

http://pubs.iied.org/6021IIED.html?k=Pretty

ecohealth.vetswithoutborders.ca
MODULE 2 – APPENDIX I

Experiencing and Negotiating Health


SECTION 1 – EXPERIENCING AND NEGOTIATING HEALTH

DESCRIPTION:
Health is a concept that can be intensely personal. It makes reference to one’s own worldview and life context. To get past the differences a common vision of the health problem and the ideal state of health, is needed. In this section, common definitions of human, animal and ecosystem health are provided. There is, however, no consensus on health definitions and a working definition must be negotiated by each research project or intervention in its particular context. Following the definitions, some strategies and tactics for negotiating visions and definitions of health are presented. Creative tension is purposely generated to help students understand how health is integrated into real world situations.

LEARNING OBJECTIVES:
- Deepen our understanding of what it means “to experience” in general and of experiencing health in particular, through a reflection on health and experiencing it.
- Develop an appreciation of humility, through the sharing of experiences.
- Explore the definitions of health by negotiating from different perspectives.
- Practice the process of negotiating a definition of health.

KEY QUESTIONS:
- What is experience, and how does one experience health?
- Is it possible to arrive at one common definition of health?
- How do you negotiate a health? (biomedical, socio-economic, etc.)
- In what ways is health a negotiable term?
- What are some of the processes by which we can negotiate health in our ecohealth work?

DISCUSSION QUESTIONS:
- Does how we define health make a difference to how we treat health? How we develop our research or intervention? How we approach our practice?
- Can the same definition of health lead to multiple approaches to dealing with health?
- Can certain definitions of health lead to erroneous choices in methodology with respect to health?
- How can we make links between the individual experience and equity and gender issues (socially defined identities)?
- Why are these valuable? Why is it important to foster sharing of one’s values?
- What are you experiencing? What are you not experiencing?
- What are you capable of being aware or conscious of? What are you incapable of being aware of or conscious of?
- If the definition of health is always open to negotiation, how do we use it to inform our practice?
• How does the process of negotiating health affect the way YOU experience your own health?
• Is it necessary to reach a consensus on the definition of health?
• Does the definition of health change depending on the perspectives involved?
• How does the way we deal with or define human health issues affect animal and environmental health?

Reflective Prompts:
• What do you do when you are healthy?
• What is it like to be healthy?
• What do you do when you are sick?
• What is it like to be sick?
• How can illness be prevented?
• Does what makes you healthy also make others healthy? What about animal health or ecosystem health?

Key Content:
Defining Health

Health has a number of different definitions, and the concept of health challenges organizations that take up its cause. Classic definitions of health include those of the World Health Organization’s (WHO) Constitution: “...complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1967) and the Alma Ata Declaration: “The extent to which an individual or group is able, on the one hand, to realize aspirations and satisfy needs; and, on the other hand, to change or cope with the environment” (WHO, 1978). The latter definition makes reference to an individual’s relationship with the environment. It does not, however, draw out the interdependence of the ecosystem’s health, human health and animal health. Some groups have attempted to rewrite the standard WHO definition of health; others go into more detail in mission statements or other documentation. One Health, for example, is dedicated to fostering collaborations between physicians, veterinarians and environmental scientists. The American Veterinary Medical Association defines it as “the collaborative effort of multiple disciplines – working locally, nationally, and globally – to attain

“Health offers an approach to assessing the multi-faceted well-being of organisms, populations, communities and ecosystems. The combination of health with sustainability brings together the notion of a currently desirable state with that of longevity. In this, the less focused notions of what has been called sustainable development are made clear” (NESH, 2011).
optimal health for people, animals and our environment”. James Kay’s Diamond Diagram highlights how the needs of ecosystems are linked to the needs and wants of society in the presence of policy makers and other stakeholders (Kay et al. 1999).

Less attention has been paid to defining and refining the definition of “animal health”. Indeed, a study looking at how animal health is defined in veterinary texts found that most did not present a definition of health (Gunnarsson, 2006). While it was rare that an author referred solely to animal productivity, this would never be considered a pertinent category when referring to human health. Furthermore, the environment was rarely taken into consideration in these texts. When it was, it was often in reference to disease (not health) or a "failure to produce."

Attempts to define ecosystem health in modern science are much more recent. An early definition is the following: “an ecological system is healthy...if it is stable and sustainable— that is, if it is active and maintains its organization and autonomy over time and is resilient to stress” (Costanza et al. 1992, p. 9). Ecosystem health is routinely defined with regard to a few parameters (such as diversity or productivity) and assessment relates to populations rather than individuals. A true evaluation, however, would also examine the interrelationships between populations (Schaeffer et al. 1988). Further, the original state of many ecosystems is not known to science, although traditional ecological knowledge can sometimes be used to reconstruct how the ecosystem might have looked before perturbation (Houde, 2007). In addition, our tools are not sophisticated enough to allow us to accurately establish how healthy an ecosystem is (Vogt, 1997). These complications lead some scholars to wonder whether it is even useful to speak of ecosystem health (Vogt, 1997). Definitions of ecosystem health also make frequent reference to human health and policy making. Viewing ecosystems in terms of human health provides important opportunities for the integration of social and health sciences into environmental management (Rapport et al. 1998). Ecosystem health can be linked to the services that ecosystems provide human communities to sustain them (Rapport et al. 1998), resulting in the Millennium Ecosystem Assessment definition of ecosystem health as “the ability of an ecosystem within its surrounding landscape to continue to provide a particular set of services.” (MA, 2003, p.69)
Health is Multiperspectival:

When a problem is being defined, multiple perspectives are brought to the table. Each individual, species, or ecosystem will have its own definition or requirements for health. In order to fully understand the health problem, all of these perspectives need to be acknowledged and explored. Module 6: Participation and Research elaborates on this theme. This exploration often highlights the need to look at health in terms of complex systems [See Module 3: Complexity]. Further, bringing in different perspectives on health can often highlight issues of gender [See Module 5: Gender], power and equity.

Two particular perspectives, “Western” and “traditional” views of health, often clash. On the one hand, Western science is rooted in a worldview which grew out of the dualism of Descartes. In this system there is mind and body, humans and nature; elements which as antitheses to one another. Humans can understand nature because they are separate from it. Following Descartes, Hume and Berkeley introduced the inductive method and modern science as we know it was born (Russell, 1961). The methods presuppose a reductionist view of nature – by reducing nature to its constituent parts, scientists could understand its internal workings (Suzuki and Knudston, 1992). The health sciences, particularly with respect to quantitative methods (see Appendix), have largely adhered to these principals.

Traditional views, on the other hand, often recognize the complexity of nature. They engage with local dynamics of an ecosystem to try to understand it as fully as possible, while retaining a certain awe of the enigmatic mysteries that nature offers us. Traditional Ecological Knowledge (TEK) is intrinsically ecosystemic and interdisciplinary. Both the scientific information and the methods used bear a striking resemblance to the ecosystem approaches to health. See the Appendix for an example of where differing definitions and a disregard for traditional knowledge led to a backlash.

There is, however, some convergence between “Western” science and “traditional” views. Einstein’s Theory of Relativity shows that one can never know both the velocity and the position of an object at the same time, Heisenberg discredited Newtonian physics by showing that pausing nature to study it gives a false representation since nature is inherently dynamic, and Bohr demonstrated that the behaviour of subatomic particles can only ever be expressed in terms of probabilities. Further, systems thinking has revealed cases of synergy, where the properties of systems do not seem to equal the sum of their parts. Traditional science has been criticized as a “disconnected, inadequate description of the whole” (Suzuki and Knudston, 1992). Ecosystem approaches to health attempt to retain a holistic focus.
Negotiating Health:

Ecohealth research and practice focuses on process. There can be as many different definitions of health as there are stakeholders. Different perspectives shed light on divergent worldviews and positions that are likely to come to the fore later on. Going through the process of acknowledging different perspectives can also help determine the positions and perspectives that are absent from the discussion. As the number of stakeholders and the complexity of the issue increases, the process of negotiating a common vision of health and of the issue at hand also becomes more complex. Yet, at the same time, the process of negotiating health can help foster a sense of community and better frame health issues. It highlights areas of convergence that can be used to develop a common vision. The focus is on the process instead of the outcomes, allowing us to understand where people are coming from and why they have a particular worldview. It then becomes part of the process of deciding how to go forward with the limitations expressed.

Activities:

Activity 1: Define and negotiate health

TOTAL TIME: at least 60 minutes
OBJECTIVE: To facilitate participant’s experience of the multiple perspectives of health and live the process of negotiation through a role playing game. This is a good activity to have in the beginning of the course as it creates a sense of community and builds relationships between the participants. To foster this sense of community, all participants – students and instructors – should be actively engaged in this activity.

STEP 1: Specific definitions of health (15 minutes)
- Divide the participants into small groups (3 or 4 max).
- Give each group a different perspective or standpoint (which has been decided upon beforehand by the team; see Box 2 for some ideas).
- Ask each group to develop a working definition of health that considers the imposed perspective.

Box 1.
Sample perspectives for negotiating health activity
- Pregnant waitress from small community
- International forestry company CEO
- Master tradesperson from a small riverside community who works for the forestry company
- Retired public health nurse
- Female salmon and her offspring 7 generations from now
- Boreal forest in the Springtime
- Unborn moose
- Provincial Ministry of Health
- Birch tree seeds
- Child who plays in a creek
**Note:**
- the diversity of perspective is important for the negotiation process in step 2;
- it is important to include standpoints from the non-human world;
- include time and scale dimensions.

**STEP 2: Negotiating health** (at least 20 minutes – give more time if you can. This round takes more time than the first step as this is where the real process of negotiation begins)
- Reorganize the groups to make up to 5 groups where the individuals from each group in step one are spread out.
- Ask the participants to present the definition that emerged in step 1 to their new group.
- Negotiate a new definition of health that takes into account the different perspectives at the table.

**Note:** Each of the new groups doesn’t necessarily have a representative of all the imposed perspectives of step 1. It may happen that some groups don’t arrive at a consensus or a common definition in the time frame allowed.

**STEP 3: Wrap-up discussion** (30 minutes)
- Bring the participants into plenary.
- Ask each group to state its definition of health. **NOTE: If a group hasn’t arrived at a definition explore with them why and how this makes them feel. Probe into whether words were the hindrance and whether some other representation (image, sound, etc.) could better synthesize perspectives and experiences.**
- Extract commonalities and differences from the different definitions.
- See if the group can get the 5 definitions down to 3.
- Debrief the negotiation process. Some discussion questions could be:
  - How is “health” a negotiable term?
  - How did the negotiating process occur?
  - Are any of these definitions transdisciplinary?
  - What role does willingness play in negotiating a definition?

**Note:** Be aware that there might be some frustrations at this point and be prepared to discuss and debrief this by looking at the process.

**Note:** Definitions can be kept for other activities in the course. If they are put in a visible place, participants can go back to them as the course evolves. They can be a dynamic teaching tool. It is also a good idea to synthesize the process. Ask each group to bring up their hand written initial definition from step 1 and save the definitions produced in step 2. Create a document which shows the evolution of definitions through the three steps and provide this document to the group.
- This activity is designed as a good icebreaker and should be done at the beginning of the course.
Activity 2: Reflection on our own definition of health

OBJECTIVE: To reflect on one’s own way of experiencing and defining health.

DIRECTIONS: This activity can be part of a “reflective passport” and can be used as a transversal activity prompting reflections on the different fundamental concepts of ecohealth. The reflective passport is a journal where students can write their thoughts on the different concepts presented during the course and revisit them as they evolve during the course (See Module 5: Gender for an example of a reflective passport).

PRIOR TO THE COURSE: Ask students to write their own definition of health.

DURING THE COURSE: periodically (maybe 3 times during a 10 days course) ask students to go back to their definition of health and write their reflections/rewrite/adapt their definition. During sessions, field trips, and when debriefing health definitions, you can ask students how the definitions presented by groups, papers, or presentations resemble their own.

Activity 3: Mindfulness Meditation

10 minute presentation on the benefits of meditation (optional). 10 minutes of meditation and at least 30 minutes of discussion: The course itself can be a trying experience, with full schedules and constant contact with a new group of people. Ask students to reflect on how their health changes in these new circumstances, how they are “experiencing” health in the present. A mindfulness exercise can be carried out during class. Yale University has a research programme studying the impacts of mindfulness meditation and provides resources for carrying out meditation exercises. The first of the three audio exercises on their “resources” site (http://medicine.yale.edu/psychiatry/ytnc/care/resources.aspx) entitled “Body Scan Meditation” is an interesting exercise to bring peoples focus onto their own body and how it feels. Have people stay in their seats and close their eyes while you play the audio clip for them. Hold a discussion following the meditation, linking back to the concepts seen in the course and tying this personal “experience” of health into theory. Is it important to dedicate time to reflecting on health? To what extent is health an embodied experience? A theoretical concept? Does their own experience fit with the