CHAPTER 1

An introduction to futures

1.1 What does "futures" mean?

Futures research has been going on for 50 years, and health-futures activities have already been carried out in some countries for over a decade. Nevertheless, the "futures" approach is still unfamiliar to most health professionals. This introductory chapter will therefore explain what the term means and what its relevance is to the public sector.

The futures approach is not a substitute for long-term planning, strategic management and policy-making, though it can support and complement these processes, but rather an anticipatory discipline closely related to them. Over the years, the futures approach has exchanged ideas and techniques with them, as well as with political and social science, economics, policy studies, computer modelling, human ecology, sustainable development, organizational learning, systems thinking, decision theory, and game theory.

However, academic disciplines have traditionally been clearly separated from one another so that these exchanges and the resulting shared interests have not always been acknowledged or even recognized. Readers who work in the public sector but have had little or no exposure to futures ideas will probably discover that many futures concepts and methods are familiar, although possibly known by other names. The overlap between futures and other anticipatory disciplines makes it difficult to define the limits of futures and also raises the question, "Why use futures at all?" The answer is that the futures approach provides a richer set of ideas about the future and tools for exploring the future than can be found in the individual disciplines on which it has drawn, and also has its own unique contributions to make.

The futures approach is not meant to replace the established anticipatory and decision-making processes used by governments and other institutions, nor is it intended to be a substitute for planning, strategic management, and policy formulation. Applied appropriately, however, the futures approach can support, strengthen, and complement these activities, e.g. by identifying previously unrecognized factors affecting a sector, providing a better understanding of how a system functions, and tracing the longer-term and cross-sectoral effects of policies.

Furthermore, the futures approach can serve purposes for which neither planning nor policy-making is intended or for which they are insufficient by themselves. It provides mechanisms for facilitating change and stimulating new ways of thinking, allows participation in decision-making, draws people and institutions together to work cooperatively towards a common desired future, and can be used effectively to test options, re-examine priorities, and renew strategies.

The following five aspects that distinguish futures from other anticipatory approaches deserve special mention:

- *Breadth of coverage.* Planning within a sector is usually focused more or less completely on that sector, strategic planning takes account of the major outside factors that may influence intrasectoral trends, but the futures approach goes a step further. It typically considers a much wider field than would be addressed in a planning or policy exercise, including other sectors, international aspects, and even factors that do not yet exist or are just emerging.
- *Attention to underlying causes.* The futures approach involves looking beyond surface patterns, such as trends in various sectors, to discover the underlying factors and interactions that cause these patterns.
- *Different questions.* Futures projects often answer questions other than those addressed in planning and policy-making. Rather than asking "What can we do to meet needs, given our current resources?", a futures exercise is more likely to ask "What is our desired future for this sector?" The question "What is the most likely future we should plan for?" may be posed, but so too might the question "What are some unlikely futures that might nevertheless happen, and that we should be prepared for?"
- *Sources of information.* The information sources used in futures work include some that are seldom used in other anticipatory processes. Official information systems and formal databases may be used in futures work, but so too may interviews with a small group of carefully selected individuals, public opinion gathered through surveys or open meetings, and ideas gleaned by scanning the popular media and the academic literature.
- *Time perspective.* Futures research differs from policy-making and planning in how far into the future it sets its sights. The time perspective of a futures exercise is usually at least 10 years, frequently 20 or 30 years, and sometimes even longer.

This last characteristic, the extended perspective of the futures approach, is often misunderstood and is a major cause of scepticism about the worth and validity of futures work. Why look 30 years into the future, when current

problems are so urgent? And how accurate are forecasts likely to be, when they cover such a long period? These questions reflect a basic misunderstanding about the philosophy and purpose of futures work. Futures activities look far into the future not in order to predict or plan over that period but to elucidate the long-term consequences of current policies and strategies. A primary reason for doing futures exercises and studies is therefore to improve the way in which current problems are handled, often by elucidating how various policies and strategies might affect trends over extended periods of time and across sectoral boundaries. The extended time perspective of futures work is necessary to discover delayed effects that would not be obvious in an analysis covering only the next 5 or 10 years. A 20- or 30-year time span can put today's problems and challenges into a different perspective, showing some issues to be more or less important than they currently seem. The extended time frame can also point to kinds of information that will be most useful in planning and policy-making in the future but which should be collected now.

Because of the differences between futures and other anticipatory methods, integrating the futures approach into ongoing policy-making and planning yields many benefits. Preparations for the future are more likely to be effective if they are based on more than a single image of that future. Most institutions work on the assumption that the future will be as described in their plans, yet history shows that it is, in fact, very seldom what we expect it to be. The inevitable result is that management can easily become a long series of reactions to "unexpected" crises—crises that could actually have been anticipated if more than a single future had been considered. Incorporating a futures perspective into policy-making and planning can change this pattern, making an institution better prepared for a wider range of future contingencies and thereby improving its performance and ability to fulfil its mandate.

Such an approach is increasingly relevant today because the world is changing very rapidly. Exponential trends of various sorts can be traced in many sectors and the rate of change is growing ever faster. Traditional methods of planning are not designed to function under such conditions. A 5-year plan will be successful only if the conditions expected when the plan was made actually prevail, but this is becoming increasingly unlikely. The futures approach provides a mechanism whereby planning can be done in a rapidly changing world, by widening the range of futures that are anticipated, providing early warning of potential future threats and opportunities, and allowing institutions to rehearse their responses to different future situations.

Better plans and more flexible strategies capable of handling a diversity of trends and events are not the only benefits of a futures perspective. Institutions that incorporate the futures approach into their regular policy-making and planning processes are likely to develop an increased ability to adapt, a

greater sensitivity to what is actually happening in the world, and an enhanced capacity to respond quickly to changing conditions. In other words, futures work promotes organizational learning because projections from the present into the future very often challenge the mental models of people in the institution, forcing them to examine and reconsider the assumptions on which institutional policies, plans, and strategies are based.

Finally, the futures approach has a role to play in motivating action. When conditions are difficult and something must be done to improve the situation, the sheer magnitude of the current problems can be psychologically overwhelming. People know that steps must be taken, yet feel that there is no point in trying. Neither policy-making nor planning are designed to handle this challenge, but the futures approach is. By carrying out certain kinds of futures projects, people can identify the future that they want and mobilize action for achieving that envisioned future. In summary, incorporating a futures approach into policy-making and planning can increase preparedness, promote organizational learning, break a pattern of habitual "crisis management", and motivate action.

Futures projects can be powerful complements to policy formulation and planning in any sector and can serve a variety of different purposes. They can be carried out to prepare an institution or a government for a range of possible futures through forecasts of trends and the construction of probable scenarios. Others can be done to improve foresight by presenting clear images of futures that are less probable, yet still possible, and which should also be anticipated. Some activities can be designed to help people clarify their vision of how they want the future to be, so that they can begin working towards that preferred future, while others can be used to support policy-making and planning by tracing into the future the possible outcomes of different policy decisions. As the rest of this chapter will clarify, all these purposes are both valid and possible.

1.2 The challenge: learning to construct a project

In the late 1980s, an international agency held a workshop on national futures studies for participants from about 20 countries. The workshop staff, all experienced professionals, presented a series of lectures that together described a wide range of techniques used in futures work. At the end of the week, one of the participants, a professor at a leading university, commented, "I've now attended five workshops on national futures studies, and I certainly know all the methods. But I still don't know how to do futures work!"

His comment was understandable. The futures field has no established, widely accepted rules about how work should be done, and actual activities

are highly individual in character, carried out for different purposes and involving both different designs and different methods. The organizers of futures training courses and authors of futures handbooks have sometimes attempted to solve this problem by outlining what they considered the "best" way to do a futures project—a small preselected set of designs or even a single design. Others have focused instead on components commonly found in futures activities or on specific tools. None of these approaches suffices. In order to construct a futures project, people must understand certain fundamentals analogous to the different aspects of building a physical structure. These fundamentals include:

- The suitability of different constructions for different purposes (warehouses for storage, homes to live in, clinics to provide health care, etc.).
- The use of common components in construction (electrical wiring, masonry, roofing, etc.).
- The arrangement of components in various designs (e.g. the arrangement of the components mentioned above, as shown in blueprints for different types of buildings).
- The tools available and the functions that each fulfils (hammers for knocking in and pulling out nails, saws for cutting wood and other materials, drills for making holes, etc.).

Once people become familiar with these fundamentals, they can make quite complex constructions. This does not mean that they must adopt a complicated design, or use all possible components or every available tool each time they build something. The requisite knowledge is there, if and when it is needed. Even more importantly, once the fundamentals are understood, even simple constructions can be built well.

People who read futures handbooks or attend futures training programmes usually do so because they want to learn how to do futures work—how to design and construct projects of various sorts—but what they learn may be the equivalent of electrical wiring or masonry. Or they may be taught to build one standard building, for which the blueprint and one set of tools are provided, but not how to build other kinds of buildings. Or, worst of all, their training may consist only of an introduction to a tool box.

The need for a comprehensive introduction to all the fundamentals has been kept in mind in the preparation of this handbook. Chapter 4 (Common components) contains an outline of a hypothetical project, but is used to illustrate how common components can be arranged to form a design, and is not intended as a blueprint for how every futures activity should be carried out. Chapter 5 (Alternative designs) gives numerous examples of other approaches suitable for many different purposes and circumstances, and ranging from short exercises to ongoing programmes.

1.3 Terminology

Before more substantial matters are addressed, a few comments on terminology are necessary. The word "futures", in the plural, is generally used to encompass the whole futures field. "Futures studies" and "futures research" are also commonly used, but these terms are sometimes defined in such a way as to signify particular kinds of futures work. One popular scheme divides the futures approach into futures research (predictions, economic and technical forecasts, etc.), futures studies (scenario writing, futures issues, etc.) and the futures movement (networking, alternative lifestyles, imaging and empowerment workshops, and so on (*1*). Although these divisions may seem reasonable they are far from being universally accepted, and dozens of other schemes have been proposed.

The dispute about labels for the whole futures field and its various functional subdivisions was addressed almost 20 years ago by Cornish in his book *The study of the future* (*2*). The relevant chapter, "A field in search of a name", begins with a sentence that sums up the problem very neatly: "Futurists do not know what to call their subject". The chapter lists many terms that could be used to embrace all aspects of the futures approach, including futurology, prognostics, futuribles, futurics, futures analysis, and futuristics, the last being Cornish's own favourite. But Cornish also reported that a poll of World Futures Society members indicated that "futures studies" and "futures research" were their first and second choices for terms describing what they do. Today, the international futures community continues to use these terms in a broad sense. This is reflected, for example, in the widespread inclusion of "futures studies" and "futures research" in the names of organizations and institutions doing every possible kind of futures work.

Throughout this handbook, terms such as study, activity, research, exercise, and project are used primarily in their broad, nonrestrictive sense to mean any type of futures work. Within this handbook, too, futures work will be referred to by a variety of terms, including futures projects, futures activities, futures exercises, futures studies, futures research, and so forth. All these labels will be used in their non-restrictive senses, i.e. to mean simply some kind of futures-oriented work. The term "futures programmes" will generally be used to refer to permanent activities concerned with handling ongoing futures research.

1.4 Scenarios: images of the future

The study of futures is a complex and diverse field. A search through several issues of the international English-language journal *Futures* may yield an analysis of political strategies, a description of a vision of a sustainable society, a projection of international military relations based on advanced

mathematical techniques, a computer-based forecast of the economic sector, a report on a Delphi exercise (a method of obtaining the consensus opinion of a group of experts; see section 6.2.4) about possible trends in education, and even a piece of science fiction. Nor is the confusion likely to be dispersed by delving deeper into the literature. Reading a dozen books about the futures approach will probably strengthen newcomers' impressions that the futures field lacks not only a standard terminology, but also a core philosophy, standard methods, and a common purpose. The situation facing people trying to understand the futures approach is described below (3):

> What a maze the futures field must seem to outsiders! If, out of curiosity, they come to one of our professional meetings, what a struggle they must have reconciling economic forecasting, global computer studies, science fiction writing . . . and corporate strategic management programmes. How frustrating it must be for them, trying to fit game theory, trend extrapolation, technological assessment, imaging workshops, and cross-impact matrices into one coherent whole . . . Think of the further confusion they must suffer if they decide to explore the futures literature . . . How baffled they must be by the conflicts in terminology, including the multitudinous meanings of scenario . . . What disorientation they must experience, trying to follow the arguments about normative versus objective, expert versus participatory, quantitative versus qualitative.

A closer examination may not be the best way to obtain a clearer picture. It may be better to take a few steps back, look at the whole field, and then ask, "What is the underlying pattern? What do these activities have in common?" One point that becomes clear from this bird's eye view is the central importance of scenarios—images of the future. Again, terminology varies, and many definitions are restrictive in some regard. Scenarios are sometimes defined as explorations of alternative futures, descriptions of future situations and the events leading up to them, outlines of conceivable states given certain assumptions, and so on. In this handbook, the term will be used in its most general sense, i.e. to mean an expressed image of the future, whether desirable or feared, likely or unlikely.

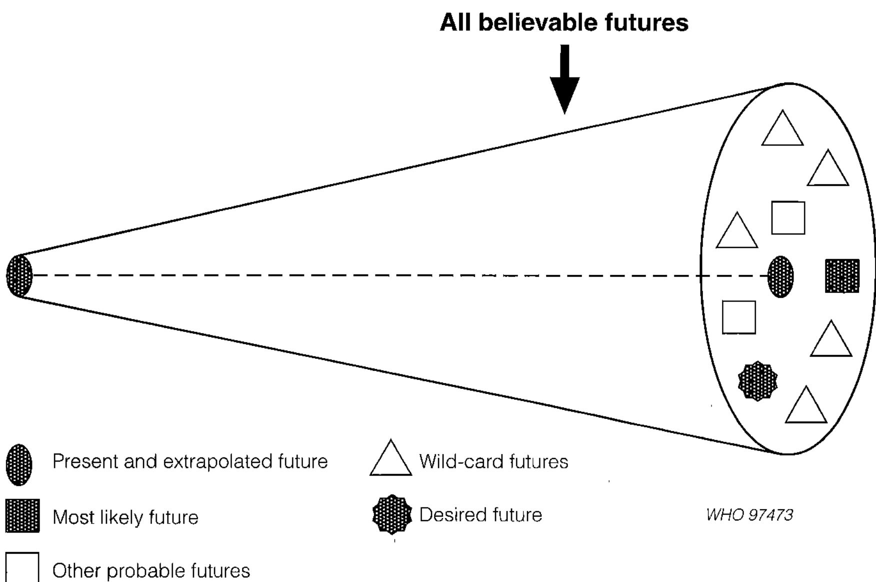
Not every futures project, however, involves the creation of a scenario. Some involve only trend analysis, the identification of emerging events, or the consideration of actors' strategies, the aim being not to build an image of the future but to identify factors that may influence that future. Such exercises often lay a foundation for scenario construction at a later date. Yet other futures studies begin with pre-existing scenarios and consider their implications for policy and planning. Nevertheless, most futures exercises result in

the building of one or more scenarios of various sorts. This central importance of scenarios is not surprising. How can the future be considered, discussed, analysed, and debated, how can policies be formulated to change it, how can actions be planned to shape it, if it cannot be imagined?

The future is often depicted as a cone of possibilities (see Fig. 1). The present is represented as a single point. Radiating from it are all the futures that might happen, which fan out to form a cone rather than a tube, since the diversity of possible futures increases in proportion to the distance from the present. A cross-section of the cone at any future time covers all the possible futures at that time, some of which are probable, while others are possible but unlikely (wild cards). A few are desirable; many are undesirable. One future is the one that can be extrapolated from current trends, another is the future that is considered "most likely". This is normally not the extrapolated future but one that takes into consideration highly probable future events. When people do futures work, they may focus on just one of these futures, or they may consider two, three, or even more.

Some examples of scenario types and the labels given to them are presented in Box 1. These are not exclusive—it is possible for a scenario to belong to more than one category. As the list shows, there are some major terminological problems. Many people working in the futures field have

Figure 1. ***The future as a cone of possibilities***



Box 1. ***Scenario types and labels***

- Scenarios of futures considered to be "most likely" (expected scenarios, environmental scenarios, reference scenarios, most probable scenarios, probable scenarios, predictions, projections, forecasts, trend scenarios).
- Scenarios depicting futures which are believable, which might happen (feasible scenarios, plausible scenarios, probable scenarios, possible scenarios, exploratory scenarios, alternative scenarios).
- Scenarios that describe futures based on extrapolations from the present (extrapolation scenarios, baseline scenarios, trend scenarios).
- Scenarios of futures other than the expected or extrapolated ones (exploratory scenarios, alternative scenarios, contrasted scenarios).
- Scenarios describing unlikely or impossible futures (wild-card scenarios).
- Scenarios that depict futures resulting from various combinations of both likely and unlikely events, as well as both desirable and undesirable happenings (mixed scenarios).
- Scenarios that describe futures which differ from the expected ones because of interference by policies or by other means (strategic scenarios, alternative scenarios).
- Scenarios of wished-for futures (desired scenarios, preferable scenarios, alternative scenarios, horizon scenarios, utopian scenarios, visions).
- Scenarios of futures that are both wished-for and feasible (visions).
- Scenarios depicting futures that may happen, as opposed to futures that are desired (exploratory scenarios).
- Scenarios of highly negative futures (dystopian scenarios).
- Scenarios that describe a final future situation, a snapshot of the future (situational scenarios, end-point scenarios).
- Scenarios of events leading to a final situation (developmental scenarios, strategic scenarios, interim scenarios).
- Scenarios depicting the future based on certain distinctive sets of assumptions (scenarios named after the assumptions on which they are based, such as the great leap forward, stagnation, international integration, hard times, sustainability, transformation, and so on).
- Scenarios that focus on different aspects of the future (sectoral scenarios, multisectoral scenarios, macroenvironmental scenarios, institutional scenarios, etc.).

proposed definitions and classification systems for scenarios, and these seldom agree (*2, 4–10*).

Thus "trend scenario" may refer to a scenario of the most likely future, or to a future that is a direct extrapolation from the present, sometimes defined as a highly unlikely future. "Alternative scenarios" may be all the scenarios of a possible future, only scenarios other than the expected one, or only scenarios of desired futures. Some texts say that "visions" must be feasible; others argue that their probability is irrelevant.

And so on—scenario nomenclature is far from settled and will probably remain so for many years, until a taxonomic system evolves that can adequately distinguish between all the ways in which human beings imagine the future. In the meantime, every piece of futures work must include a clear explanation of what the authors mean when they refer to different scenario types.

But why do so many scenario types exist? And why should a single futures exercise involve the creation of more than a single scenario? The diversity of scenario types and the presence of multiple scenarios in a single futures project are the result of certain differences in approach, which will be discussed in the following sections, namely:

- Differences in perceptions of the future.
- Differences in opinions about where values fit into futures work.
- Differences in focus.
- Differences in ideas about the application of the results to policy-making, planning, and programmes.

1.5 Perceptions of the future

For many reasons—personalities, philosophies, cultures, and professional interests and experiences—human beings have widely different opinions about the nature of the future, including its predictability, its rate of change, and its desirability. Thus some people see the future as predictable because they believe that it is largely determined by processes that are already in play. In contrast, some people conceive of the future as something that is "not yet written". There is no single "future", they assert; there are always multiple possible "futures".

Between these two points of view lie others, in which the future is perceived in terms of probabilities and possibilities. Tied to these perceptions about predictability are others regarding the rate of change that will characterize the future. Some individuals believe that past, present, and future will form a smooth continuum. Some see the future as bringing gradual but

distinct change over an extended period of time. Yet others are convinced that the future will be dramatically different in almost every aspect of life. Even within these categories, people can disagree on the desirability of the futures that they foresee. One person may anticipate a particular future and judge it to be desirable, while another may expect the same future but see it as negative. These and other attitudes towards the future have been described as follows (*12*):

> [People involved with futures] are a curious blend . . . cautious and starry-eyed optimists; fatalistic and realistic pessimists; . . . cornucopians (who see a horn of plenty for all), and catastrophists (who see crisis upon crisis); utopians and their opposite, dystopians; . . . extrapolationists (who view the future as a continuation of past-to-present trends), transitionists (who anticipate slow, significant change over generations or centuries) and transformationists (who forecast rapid, dramatic, traumatic, revolutionary change).

1.6 Values

Opinions on the proper place of values in futures work also differ, and personalities, philosophies, cultures, and even religious convictions again help to shape the viewpoints.

Some people argue that the most useful approach is an objective one that provides an unbiased overview of possibilities. In their view, images of the future are best constructed without the injection of values and opinions. Judgements about what is desirable should be made after the scenarios are completed, and possibly not by those who create them, but by those who will use them in decision-making. In a national study, for example, judgements may be the responsibility of policy-makers, stake-holder groups, or the country's citizens.

On the other hand, it is also possible to argue for normative futures work. Advocates of this approach believe that a futures exercise is valid only if it points to a desired future. They argue that judgements about what is desirable must be made before any scenario can be constructed, and the values on which the scenario is based must be indicated.

It is sometimes said that objective futures projects result in maps showing the many ways that a society may develop, while normative ones provide signposts directing them towards specific goals. In the debate about values, as in those about predictability, gradations exist between these two alternatives.

It should be emphasized here that a futures project is not "value free" because an objective approach to scenario building is adopted. Values are integral to all futures work. The question is when they should be introduced. In a "normative" project, in which the scenarios are images of desired futures, values must necessarily be identified before or during scenario construction. In an "objective" project, on the other hand, specific scenarios are constructed, not because they are desirable, but because they are probable, or provide foresight, or reflect important options. Values then come into the picture after the scenarios are completed, during the evaluation and application processes.

1.7 Focus

When a group looks towards the future, they must focus on a particular level. They may decide to concentrate on the macroenvironment, i.e. on everything that is happening external to their own institution and to the sector of concern. This may involve the consideration of developments in other sectors or an analysis of the international political and economic situation. The group may choose instead to keep their sights on the sector with which they are primarily concerned—health, education, agriculture, natural resources, the economy, or whatever. Or they may focus on an institution, organization, neighbourhood, or other entity. This may be, e.g. the corporation or agency for which the group works, or the town in which they live. What focus a group chooses inevitably affects the kind of questions that they ask and the kind of scenarios that they construct. A futures team that looks at the macroenvironment will probably ask "What is likely to happen in the world that we should be prepared for?" rather than "What do we want to happen in the world?" because they feel that their power to influence macrotrends is limited. On the other hand, if they focus on the sector of which they are a part, their attitude is likely to be less passive. They will see the sector as something in which they themselves play a role. Their goal in doing a futures project will be to understand the sector better, to develop a more acute sense of what might happen within it, to anticipate the dangers and opportunities that would result, and to foresee points at which decisions and actions could significantly affect trends. This may also be a group's goal if their focus is on an organization, neighbourhood, or other entity of which they are a part. They may then even choose to take a strongly proactive stance, doing a futures project to identify the future that they prefer and then taking the necessary steps to bring it into being.

Futures projects can also be designed so that the focus shifts from one level to another. This is a common approach when a series of related futures projects are carried out sequentially. For example, the first exercise

may produce scenarios of the macroenvironment, the second, scenarios of the specific sector, and the third, scenarios of the institution's own future.

1.8 Application to policy-making, planning, and programmes

Almost all futures work is connected in some way with policies, plans, or practical actions. Serious consideration of the future is pointless unless it leads to new attitudes, better policies, more effective plans, new ways of doing things, or new solutions to old problems. This is true regardless of whether the focus of the work is a country, an institution, or a community.

There are a number of ways in which a futures project can be related and applied to ongoing activities, and the way that is chosen will influence the type of scenarios constructed. One possibility is a direct approach. The people doing the project ask the question "How would different policies affect the future?" and then construct their scenarios on the basis of those alternative policies.

But this is not the only possibility. Another approach is to create scenarios of several plausible futures and then, during the evaluation phase of the work, assess the effectiveness of different policies with each scenario. Or a group may choose to build an image of a desired future and then determine what policy decisions and practical actions would be required for that future to be achieved. Examples of how futures can be linked to ongoing processes are provided throughout this handbook, especially in Chapters 2 (Interviews with leaders of futures projects), 5 (Alternative designs), and 7 (Application of futures techniques to health).

1.9 General purposes and scenario choice

It is now possible to return to the questions of why there are so many different types of scenario and why futures activities usually involve the creation of more than one scenario. As explained above, in every futures activity, the people involved have opinions about four issues, namely, the nature of the future, and especially its predictability; the proper place for values in futures work; the appropriate level on which to focus; and how the connection should be made between the results of the project and planning and policy-making processes. The opinions which the group holds on these issues will determine the general purpose of their project, and the general purpose will determine the choice of scenarios.

The classification of general purposes, like the classification of scenarios, is problematic and has resulted in numerous taxonomies. No existing taxonomic scheme covers all cases, none is universally accepted, and many

contradict each other. In this handbook, although it is recognized that the divisions are arbitrary and do not even cover all possibilities, general purposes are divided into five categories, as follows:

- Prediction: describing what one aspect of the future is expected to be.
- Forecasting: describing several feasible or plausible futures of fairly high degrees of probability.
- Foresight: looking at a wider range of possible futures, among which may be probable and improbable ones, desirable and undesirable ones, "mixed" futures, and ones reflecting major trends or events.
- Envisioning: imagining one or more desirable futures.
- Testing options: determining futures likely to result from alternative policy choices and other options.

These five different purposes can be illustrated by five hypothetical futures projects. Imagine five teams of researchers, all living in the same country and all creating scenarios that touch in some way on the country's future health. The teams differ, however, in their conceptions of the future, in their stances regarding normative and objective approaches to scenario building, and in their ideas about how to link their work to policy-making and planning. As a result, they do their projects for different purposes, and create different sorts of scenarios.

Team 1 works in the bureau of census and deals with demographic phenomena relevant to health, including population growth, changes in age structure, immigration, and urbanization. The team members believe that demographic patterns and trends can be foretold with some accuracy as long as sufficient data are available. They carry out an objective study for the purpose of predicting what they see as the most likely demographic future, in order to provide a basis for policy-making and planning that will also be applicable to the health sector.

Team 2 is located in an academic foundation that does research on long-term economic patterns and their effects on social well-being, including health. They see the economic future as being largely determined by processes already in play, but not wholly predictable. For them, the future is not a single line, but a cone of possibilities. Their goal is to identify a number of probable and believable futures so that strategic planning and policy-making can take them into consideration. Like team 1, they also do an objective study, but rather than making a single prediction, they forecast several feasible futures and assign a probability to each.

Team 3 is an epidemiological task force at a school of public health within the national university. Because of the many forces currently affecting the national epidemiological pattern—climate change, regional conflicts, the

re-emergence of old diseases, and the chance of new epidemics—the team members see the future as being fairly unpredictable and likely to involve some rapid and dramatic changes. Their goal is to improve institutional foresight and encourage a readiness to deal with a range of different future situations. They consequently generate not only scenarios of plausible epidemiological futures, but also several unlikely "wild-card scenarios". The inclusion of the wild-card scenarios in their work emphasizes that the improbable does happen and should be anticipated.

Team 4 works in a nongovernmental organization oriented towards the improvement of public health at the community level. The team members are interested primarily in what could be, and believe that human beings, organizations, and societies can bring about a desired future if sufficiently motivated. The current likelihood of that future is irrelevant to them, since their goal is to create an image towards which they and others can strive. Their work therefore involves envisioning, i.e. creating a scenario of a desired health future.

Team 5 consists of officials in the ministry of health primarily concerned with health-care systems. Like teams 3 and 4, they construct alternative scenarios. These scenarios all assume the same "most likely" future with regard to trends and events in the national situation, health status, demography, and epidemiology, but they differ from each other because, within this assumed framework, each projects the consequences of a different set of policies about health care. In other words, they test the options.

These five hypothetical exercises are certainly not the only possibilities, nor are they meant to indicate that certain kinds of institutions always do particular sorts of futures studies. They are described here solely to demonstrate the variety of general purposes that can exist in futures work, even in the same sector and the same country.

As the examples given above illustrate, there is—or should be—a close connection between purpose and scenario type. Different purposes can only be achieved through the construction of specific scenarios. For example, a futures project carried out for the purpose of envisioning can only achieve that purpose through the creation of a scenario depicting a desired future. A foresight-oriented exercise fulfils its function only if it includes a range of scenarios, including some unlikely ones. A predictive study demands the creation of a "most likely future" scenario. A project done to test options must involve the creation of scenarios reflecting those choices. Thus, as long as the purpose of a project—prediction, forecasting, foresight, envisioning, or testing options—is clear, a rational basis exists for deciding what kind of scenarios to construct.

1.10 Styles of approach

Studies that are done for similar purposes may resemble each other. There are thus two different styles of approach, as follows:

- A "hard approach" in which the work is objective in nature, is carried out by experts, is based on technical and computerized methods, and is designed to create a product.
- A "soft approach" in which the work is normative and widely participatory, the methods used are mainly non-technical in character, and the design is process-oriented and based on something like envisioning workshops.

Futures meetings are sometimes the scene of debates about the comparative value of these "hard" and "soft" approaches. Researchers who do the more technical and analytical futures studies criticize the soft approaches, saying that they ignore realities that must be taken into account if policy formulation and planning are to be done well. Adherents of the soft approach respond by asserting that hard studies ignore central issues, do not allow public participation, and are done by researchers who are mesmerized by computer models and databases.

The hard approach has its strengths. Work based on a hard approach often provides a solid and scientific foundation for decision-making and ties directly into existing policy and planning processes. Technically based analyses can be extremely effective at uncovering important relationships between factors and identifying points at which intervention is most effective. They can play an important role by challenging assumptions and promoting a deeper understanding of how a sector or system actually works.

The soft approach also has much to recommend it. Because they seldom require elaborate equipment, costly software, or large databases, soft-approach activities are possible on quite limited budgets. Their impact can be impressive—they promote organizational and social learning, tap creative potentials, and catalyse action. Participants in such projects become fired with enthusiasm and willing to work together on common causes. Also, and very importantly, soft studies often address serious social issues such as insecurity, inequity, alienation, and polarization.

One point in this debate deserves special attention. Including some technical research that requires advanced training does not exclude the possibility of wider public participation in a futures project. It is true that certain kinds of futures work require special expertise and must be carried out by people with particular professional experience, but this does not prevent public involvement in other aspects of the activity, including the identification of societal goals and values and the envisioning of desired futures. In

reality, the soft–hard dichotomy breaks down, and "mixed" approaches combining hard and soft features are often adopted.

Thus a project may incorporate both statistical analysis and computer modelling ("hard" techniques) and creativity exercises and guided imagery ("soft" methods). Sometimes a hard approach is adopted during certain project components, while others are handled using soft methods. Neither the people who do futures work nor the activities that they carry out can be assigned to simple categories. In summary, both hard and soft approaches have their advantages, and a single project can, and often does, incorporate both of them.

References

1. Slaughter RA. *Futures tools and techniques.* Kew, Victoria, Australia, Futures Study Centre, 1987.
2. Cornish E. *The study of the future.* Bethesda, MD, World Futures Society, 1977.
3. Garrett MJ. A way through the maze: what futurists do and how they do it. *Futures,* 1993, 25(3):254–274.
4. Bezold C, Hancock T. An overview of the health futures field for the WHO Health Futures Consultation. In: Taket A., ed., *Health futures in support of health for all.* Geneva, World Health Organization, 1993:69–90 (unpublished document WHO/HST/93.4; available on request from Division of Health Situation and Trend Assessment, World Health Organization, 1211 Geneva 27, Switzerland).
5. Brouwer JJ, Schreuder RF, eds. *Scenarios and other methods to support long term health planning: theory and practice.* Rijswijk, Netherlands, STG.
6. Fowles J, ed. *Handbook of futures research.* Westport, CT, and London, Greenwood Press, 1978.
7. Godet M. *From anticipation to action: a handbook of strategic prospective.* Paris, UNESCO, 1993.
8. Masini EB. *Why futures studies.* London, Grey Seals Books, 1993.
9. Millet SM, Honton EJ. *A manager's guide to technology forecasting and strategy analysis methods.* Columbus, OH, Battelle Press, 1991.
10. Morrison JL, Renfro WL, Boucher WI, eds. *Applying methods and techniques of futures research.* San Francisco, CA, Jossey-Bass, 1983.
11. Haas JD. *Future studies in the K-12 curriculum.* Boulder, CO, Social Science Education Consortium, 1988.