

## **Chapter 17**

### **Handling Complex Societal Problems**

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#### **Abstract**

The Compram method is a method for handling complex societal problems in a transparent and structured way. Handling in this case means analyzing, policymaking, decision making and guiding and evaluating the interventions. The Compram method is developed by DeTombe (1994). Most problem handling methods focus on a part of the problem handling process. The Compram method, however, focuses on the whole spectrum of the problem handling process.

Because of their complexity societal problems are difficult to handle. These problems have often a huge impact on society, because they involve a great number of phenomena and actors. Each actor has his or her own goals, interest and power. In a democracy handling these problems includes dealing with all the actors. In order to do this efficiently and fruitful these problems should be handled in cooperation with the actors. The Compram method guides this process from the moment the problem is put on the (political) agenda till the evaluation of the interventions. The Compram method distinguishes six steps in the problem handling process. For supporting this process it uses all kinds of supportive methods and tools. The method is based on the three basic elements in handling complex societal problems: knowledge, power and emotion. The Compram method can be applied for all kind of policy problems like transport, environmental, healthcare, poverty and unemployment problems. An example of the application of the method is given on handling the Aids problem in South Africa.

#### **WHAT ARE COMPLEX SOCIETAL PROBLEMS?**

There are many problems that can be categorized as 'complex societal problems'. These are problems where the 'solution' is to be found at the societal level. Complex societal problems are real life problems reflecting much uncertainty and are therefore hard to

deal with. Complex societal problems are often unique in their performance although they may have occurred many times before. This means that there is no routine way of solving them. Complex societal problems are often ill-defined, multi-faceted, as well as hard to analyze, to structure and to change. Knowledge and data are missing and/or contradictory. The causes of the problem are vague or ambiguous. It is difficult to see where, when, and by whom the problem was started, who is involved in the problem and who is not, and who is affected by the problem. Although many phenomena, actors (private and governmental), and many people are involved, it is seldom clear beforehand which phenomena, groups, and actors are involved. There may be a changing group of actors. Each actor has their own view on the problem, their own goals, power and emotion.

Complex societal problems are unstructured and dynamic. They have a large impact on society at macro, meso and the micro level. Sometimes they are local problems, although mostly they are region-wide or even worldwide. They can be found in all countries of the world. It is often uncertain what impact the problem has on society, what the goals and interests of the actors are and what will be the outcome of the problem. There are no easy, simple answers for these problems. Solutions, if there are any, can only be found with great effort and are often only temporary.

Complex societal problems are interdisciplinary including aspects that are the subject of study in several scientific disciplines. Handling societal problems involves knowledge, power and emotion. The knowledge for handling complex societal problems comes from a variety of scientific disciplines. Two kinds of knowledge are needed for handling these problems: (1) content knowledge, which means knowledge about the subject of the problem, such as healthcare knowledge or environmental knowledge; and (2) knowledge about problem handling. The content knowledge comes from content experts, for example, in a health issue it might be a doctor, hospital manager or other actor. The process knowledge comes from facilitators working in the field of complex societal problems. Facilitators may have backgrounds in different scientific disciplines, but use methods derived from their original field combined with methods specially created for handling societal problems. Methods and insights used derive from a wide range of fields, including: law, economics, social sciences, mathematics, computer sciences, technology, engineering sciences, chaos theory and operational research (DeTombe, 1999).

Power also plays an important role in handling complex societal problems. Power in a democracy is divided among the problem owner and other actors. Together they must find mutually acceptable solutions or compromises. Further, in all phases of the problem managing process, emotions also play a role, including emotions about the problem, emotions about the desired goal, as well as emotions between the groups and actors, and between the people who handle the problem.

Something is called a problem when there is a discrepancy between the actual or (near) future situation and the desired future situation and/or there is a lack of knowledge and/or a lack of knowhow, and/or a lack of relevant data; as for complex interdisciplinary societal problems, the problem is often undefined and the desired situation is not always clear (DeTombe, 1994: 58).

Problem handling of complex societal handling can be defined as:

the process of analyzing, structuring and guiding a problem in order to gain more insight into the problem, whether or not this leads to influencing the problem in order to reach the desired situation. This process can take place actively or passively, consciously or unconsciously, routinely or once only, whether it is by circumventing or by forgetting the problem, by shifting the problem to another party or by (partly) changing the problem, whether through thinking, applying tools and/or methods (DeTombe, 1994: 58).

‘Handling problems’ is preferred to ‘problem solving’ because solving refers to a certain desired goal, and, as the desired goal potentially differs from actor to actor, the end of one problem process might mean a solved problem for one actor, and a new problem for another actor.

Examples of complex societal problems from agro-industry are the pollution of land and watertable by manure (Glasbergen, 1989; DeTombe, 1993), Foot and Mouth Disease, and Mad-Cow Disease (Bovine Spongiform Encephalopathy, BSE). Examples from industry include pollution by emissions, chemical contamination, noise and odour. Societal problems relating to issues of hunger, unemployment, and poverty. Healthcare examples include HIV/AIDS and Malaria. Problems related with Internet, stock market, and urban planning can also be considered and treated as complex societal problems (DeTombe, 2000b).

Although complex societal problems are diverse and may appear to be unrelated, they have in common that their causes and solutions often exceed the available knowledge in the relevant disciplines. ‘Solutions’ will only be found in a combination of changes in different areas. For example, the hunger problem in developing countries is often due to local wars. Fighting prevents local people taking care of their agriculture and their family. Often these wars are caused by political differences created in the colonial past (NRC, 2000b). Intervention in the hunger problem primarily requires a political solution, typically the creation of a stable democratic political situation. Despite their differences, all complex societal problems can be managed in a similar way.

## **CAUSES OF COMPLEX SOCIETAL PROBLEMS**

People are the cause of most complex societal problems. To complex societal problems like wars, pollution, building new infrastructure, the role of human intervention is obvious. However, humans, with the help of nature, even cause natural disasters such as avalanches and floods. Humans build houses in vulnerable areas on mountains or in the floodplains of the rivers. People live in areas of known high risk of hurricanes. Even in the case of rare events, there is a human contribution to the extent of the disaster. For example, following a rare ice-storm in Montreal, Canada in January 1998, a large area of Montreal was without electricity (used for heating, cooking and lighting) for three weeks in the middle of the winter with temperatures far below zero. The ice storm

destroyed the above ground electricity cables, a situation that would not have occurred if the cables were underground (Abley, 1999).

Another example relates to flooding. The frequent causes of flood disasters, in China the Yangtze River, in Canada the St. Lawrence River, and in The Netherlands the rivers Rhine and Maas are often caused by too much manipulation of the curves of the river or by building houses in floodplains.

## **COMPLEX SOCIETAL PROBLEMS ARE NOT HANDLED OPTIMALLY**

Complex societal problems are usually not handled optimally or efficiently leading to a waste of taxpayers' money. The reasons why these problems are handled inadequately include:

- ⌘ Economic limitations: There may not be enough money to handle the problem in a certain department, or at all.
- ⌘ Political reasons: Politicians may have hidden agendas to benefit certain groups. The manure problem in The Netherlands, for example, was inadequately handled during the period 1950-1997 because of electoral benefits to the political party (the conservative religious party) that was in power at the time (Glasbergen, 1989; DeTombe, 1993). Politicians prefer easy, quick, short-term solutions instead of finding difficult but more sustainable long-term solutions which may take more time.
- ⌘ Psychological reasons: People tend to jump to conclusions instead of taking the time and effort to study the problem fully before discussing solutions.
- ⌘ Methodological reasons and the nature of the problem itself: Complex societal problems are often too complex and too dynamic to control. The complexity of the problem itself, the many fields, actors, and phenomena that are involved, and the interactions between them, make the problem hard to analyze, to guide, and to control.
- ⌘ The problem owner: The problem owner is often not fully aware of the complexity of the problem, and may prefer to have a simple solution rather than a more realistic, but complicated answer. Problem owners are usually not aware of the more effective methods for handling these problems, and/or are not willing or able to use these methods. There may not be adequate skills available in complex problem solving (DeTombe, 2000c).

## **THE ROLE OF SCIENCE**

There is no doubt that the new century will confront society with problems that are very difficult to handle. There is a growing gap between the complexity of the problems faced by society and human capacity to deal with them. More knowledge and imagination, better methods and more tools are needed for society to survive amidst these problems. New approaches are needed for handling societal problems in an interdisciplinary manner. However scientists are confronted with difficulties when

trying to combine their efforts to meet this challenge. In order to combine their knowledge, scientists should deviate from their standard practice. The time has come to broaden the scope. When it is accepted that complex social phenomena have their own rules and laws, why not combine the knowledge, skills, and methods drawn from the technical and natural sciences with the social sciences? Structuring and guiding the process more efficiently can save time, money and effort. This can increase the quality of the outcome in terms of a more sustainable agreement, a more transparent and better 'solution'. Relatively little attention has been given to these problems till now. The field of handling complex societal problems is relatively new.

The sub-discipline of complex societal problems started looking at knowledge developed in other fields that could be applied to this issue (DeTombe, 1999). The field of methodology provides an adequate domain to discuss such a combination of scientific knowledge. Taking logic as a starting point, the question to consider is: 'how can valid scientific knowledge about handling complex societal problems be found?' In combining the ideas and methods developed in the area of the natural, technical, and social sciences, new ideas and methods can be developed and some of the already existing ideas and methods can be integrated. Combining useful knowledge derived from several disciplines in a fruitful way to enhance the problem handling skills of complex societal problems is the key question of this field.

The field demands a multi-disciplinary approach in order to combine the existing methods and tools and to develop new approaches. Theoretical scientists, applied scientists, and practitioners can combine their methodological knowledge in a way that existing methods and tools can be applied and new methods and tools can be developed, using an optimal combination of qualitative and quantitative methods. Fruitful use of existing methodologies have been drawn from (cognitive) psychology, sociology, computer science, artificial intelligence, methodology, mathematics, engineering, system theory, chaos theory, philosophy, socio-cybernetics (Geyer and Van Der Zouwen, 1986) and operational research (DeTombe, 1999). Most of the scientific support for complex societal problems comes from specific methods and tools such as Scenario Making, Multiple Criteria Analysis, Operational Research, Group Decision Support Systems (DeTombe, 1997), Decision Support Systems, and Simulation (Forrester, 1987).

Sometimes only some aspects of a field can be used for support in handling complex societal problems. In social science, especially in the field of cognitive psychology and learning theory, there is much expertise on problem solving. However, examination of the research in this area reveals that the problems discussed differ on essential points from complex societal problems. The field of cognitive psychology and learning theory focuses on how a person handles a problem, rather than how a problem is solved. The problems these fields focus on are well structured, static, relatively easy to solve and comprise problems to which an answer is already known (cf Newell and Simon, 1972). The knowledge and the methodology of this field can therefore be applied only in part to the field of complex societal problems.

The field of management also considers complex problems, at least management problems in organizations (Minzberg, 1983). The problems management theories focus

on sometimes resemble complex societal problems. Complex organizational problems, for instance with respect to international organizations, can be considered as complex societal problems. However, looking at the research in this field, we see a large volume of publications in the popular genre rather than necessarily being scientifically reliable. These books often simplify a complex issue for commercial appeal and most do not offer a scientifically reliable base to found a method.

## **PHASES IN THE PROBLEM HANDLING PROCESS**

The problem handling process comprises several phases. By identifying phases, it is possible to recognize the phase the problem handling process is in, what to do and what action to take (see Fig. 1).

### **FIGURE 1: KNOWLEDGE PHASES IN THE PROBLEM HANDLING PROCESS**

#### **Sub-cycle 1: Defining the problem**

- phase 1.1 becoming aware of the problem and forming a (vague) mental idea
- phase 1.2 extending the mental idea by reflection and research
- phase 1.3 putting the problem on the agenda and deciding to handle the problem
- phase 1.4 forming a problem handling team and starting to analyze the problem
- phase 1.5 gathering data, exchanging knowledge and forming hypotheses
- phase 1.6 formulating the conceptual model of the problem

#### **Sub-cycle 2: Changing the problem**

- phase 2.1 constructing an empirical model and establishing the desired goal
- phase 2.2 defining the handling space
- phase 2.3 constructing and evaluating scenarios
- phase 2.4 suggesting interventions
- phase 2.5 implementing interventions
- phase 2.6 evaluating interventions

The scientific support given to complex societal problems mostly focus on only two phases in the problem handling process: the phase of constructing and evaluating scenarios, and the phase suggesting interventions (see Fig. 1). These scientific activities are related to those moments in the problem handling process where the problem owner wants support in making decisions and selecting alternatives. However, these two phases are only a part of the whole problem handling process. Skipping (or only facile performance) of the first phases can lead to a less creative or fruitful solution, or, in the worst case, it can even lead to handling the wrong problem.

## **AWARENESS OF THE PROBLEM AND PUTTING IT ON THE AGENDA**

Before a societal problem can be managed, there must be an awareness of the problem at the societal level. Awareness of a problem depends on the cultural circumstances. Many issues now considered in a modern democracy as a social problem were often accepted historically as 'the way things were' and not considered as a problem. The awareness of a problem is influenced by the amount of power an affected group has. This can be real power (or powerlessness) or imaginary power (or powerlessness). A significant example is the position of women in the world. The low-level of influence women have on politics is in contradiction to the huge amount of work they perform. The political influence women have is reflected in their own view of their value and social worth. Because of this self-perception, it took ages before women became aware of their own value and, correspondingly, of their shocking position in society. Gender inequality, now rightfully considered a major issue was not considered as a complex societal problem for a very long time.

The second phase in the problem handling process is extending the mental idea by reflecting and researching – by hearing, thinking, reading, discussing, talking and asking questions about the problem. This is often done by those people who are affected by the problem. Discussion groups form and may become action groups in order to create power. Examples of action groups include the feminist action groups of the 1970s and 1980s, homosexual emancipation groups and environmental awareness groups. These action groups attempt to gain the attention of the people that eventually have to handle the problem. They do this by emphasizing the problem by demonstrations and other direct action in order to get the attention of the media and through this to put pressure on the political process. The step from awareness of a societal problem by a special group to putting it on the political agenda can be a long and hard struggle – and a critical mass is often needed.

It took a long struggle to create a critical mass to put the gender inequality problem on the political agenda. Although there have been some positive changes in the position of women especially in western countries, money and (public and private) power is still almost completely into the control and possession of men. Only gradually is the subordinate position of women seen as a problem which must be solved as a societal problem rather than being a private problem of women. Abortion is an example of the low position of women in society. For a long time, the need for abortion was considered a private problem of 'fallen women', rather than being a societal issue to be put on the political agenda and handled as a societal problem with a solution to be found at the societal level.

Another example of the long time it takes before people become aware of a complex societal problem is the flood problem in The Netherlands. The Netherlands contains the deltas of the rivers Rhine and Maas. These two large rivers have much higher flow-rates in early springtime, when there is much rain and snowmelt, than in the rest of the year. Sometimes the volume of water is so great that there is widespread flooding. In the past these large floods were considered as the punishment of God. In the 17th century, the Dutch government wanted to control this flood problem. It sent civil servants to the

local authorities to convince them to take action. Only after much effort, which took decades, could the civil servants convince the local people that the floods were not the punishment of God, but should be considered as a societal problem that could and should be managed (Lintsen, 1980). More recently, Dutch engineers argued that river dykes were not strong enough and that there needed to be a national dyke-strengthening program. There was considerable public opposition to this, but floods in 1993 and 1995 led to a diminishing of this opposition (see Chapter by Stolp).

The HIV/AIDS issue is a similar example. In the early 1980s, HIV/AIDS was considered a homosexual matter. Many people, especially in the USA, saw it as a punishment of God. This meant that, in the beginning at least, the heterosexual majority was not willing to consider this problem fully (Shilts, 1986).

Some societal problems, however, do receive easier and quicker attention. Societal problems that threaten the wealth or power of the ruling class get direct and full attention. Recent examples of complex societal problems which are a threat to the ruling class include the Vietnam Wars, the so-called 'Cold War', NATO intervention in Kosovo in 1999, and the terrorist attack on the World Trade Center in New York (11 Sept 2001). These actions cost extremely large amounts of money and they ruin and destroy land, houses, goods and life. Afterwards they leave chaos, sometimes for generations. Considering the amount of resources governments provide for military purposes in comparison to social goals – such as education, healthcare, elderly people, or single mothers – the importance military intervention has in protecting the power and economic benefits of those who are in charge becomes clear.

## **KNOWLEDGE, POWER AND EMOTION**

There are three basic elements in the management of complex societal problems: knowledge, power and emotion. Knowledge includes having information about the problem. This information is often missing crucial elements. The data needed is often missing, or has internal contradictions. It is virtually impossible to have all the knowledge needed to manage complex societal problem properly because of their complexity and dynamic character. There will always be 'white spots' and 'blind spots'. White spots are the areas of knowledge where it is known that information is lacking, and that it takes time and money to obtain it. Blind spots are areas where information would be valuable, but that due to the complexity of the problem, these areas are overlooked.

The management of complex societal problems involves different actors in the process. In these group processes, all forms of power play a role especially in reaching an agreement on the definition of the problem and on selecting interventions. There is official (formal) power and unofficial (informal) power, legal power and illegal power, institutionalized power and not institutionalized power.

The third basic element in the problem handling process is the often-underestimated influence of emotion in the process. Emotions can stimulate or obstruct cooperation

between people and between groups. Emotions include anxiety, fear, joy, sympathy and hate. There can be emotions based on prejudice or discrimination. Emotions can be rational or irrational. Emotions appear when one's interests are threatened, for example when the goal of the management process or the problem itself is undesired.

## **SUPPORTING PROBLEM HANDLING**

Societal problems need to be supported more adequately to enhance the quality and the effect of the process, and so that time and money are not wasted. This can be achieved by using various techniques and tools. The COMPRAM method (Complex Problem Handling method), as developed by DeTombe (1994; 1996; 2001), is an example of such a method. It is based on the need for an adequate, transparent and well-structured method for the problem handling process of large societal problems. COMPRAM, as distinct from most other methods, supports many phases of the problem handling process. It guides the problem handling after the problem is put and accepted on the political agenda.

COMPRAM is based on theoretical scientific notions from cognitive psychology, sociology, computer science, and theories about group-processes, as well as socio-cybernetics, chaos theory and systems theory. COMPRAM is interdisciplinary in two ways. First, because of the type of problems, many fields, phenomena and actors are involved. Second, the method requires input from several scientific disciplines. The COMPRAM method is efficient, transparent and democratic in the way complex societal problems are analyzed, decisions are taken, policy is made, and interventions are implemented and evaluated. The method was developed in the period from 1990-1994 by DeTombe (1994) and elaborated from 1994-2001 (DeTombe, 2001).

The different disciplines associated with a problem, the impact on society of these problems, and the many actors involved in the process, dictates that the problem handling process is a group process. COMPRAM starts when the legitimate problem owner, perhaps supported by one or more content experts, together with a facilitator invites participants to address the problem by forming problem handling teams. Two kinds of problem handling teams are involved. One team consists of neutral content experts with knowledge in one of the areas identified with the problem. The content experts are more or less neutral towards a certain outcome of the problem handling process. The other team consists of actors that are a party in the process. They have direct interest in a certain outcome of the problem.

**The Legitimate Problem Owner:** The term 'problem owner' implicitly means a legitimate problem owner. Legitimate means that the problem owner has by law, habit or convention the legitimate task, right or duty to handle the problem. It is very important to have a problem owner who has the right (and responsibility) to manage the problem, because it increases the chances that the teams that are invited to discuss the problem (experts and other actors) are willing to participate. Even more important, the outcome of the problem handling process has a greater chance of being accepted and implemented. With an illegitimate problem owner, the risk is high that the main actors

do not want to participate in the problem handling teams, reducing the likelihood the interventions are implemented or appropriate. A legitimate problem owner can be a group or institution, as well as an individual. Sometimes a group of problem owners can be formed, who together have the responsibility and gain the authority of the other actors to handle the problem.

**The Experts:** The process of cooperative problem handling begins by selecting a team of 'neutral' experts by the facilitator in cooperation with the problem owner. The selection the experts depends on the major fields, phenomena, actors and other groups that are involved in the problem. At the start of the process, it may not be clear which fields, phenomena, actors and groups are involved. In that case, the facilitator undertakes in-depth interviews with the experts and actors that are known, in order to gain more information about the elements that ought to be involved.

**The Actors and Groups:** Actors have a direct interest in the goals and outcomes of the problem handling process. The process affects them directly. Two kinds of actors can be distinguished: well-organized groups and unorganized groups, which are often forgotten. Both groups, however, are affected by the problem handling process. The well-organized actors coordinate their interests, and try to influence the process. Unorganized and less organized groups, like the elderly, the handicapped, and children, have an interest in the outcome of the problem, but they do not have a particular defender of their interests. In theory, policy makers should take care of the interests of both the well-organized and the less-organized groups, however, in practice, it is exceptional that the interests of the unorganized groups are taken just as seriously as those of the well-organized groups. The actors involved in the problem handling process each have their own view on the problem, their own definition of the problem and their own goals. Often actors have hidden agendas. In COMPRAM, both the actors and the unorganized groups are invited to join the problem handling process at an early stage (DeTombe, 2000a). The problem owner, as well as including the major actors, must agree on the way the problem handling process is guided. Therefore, the method has to have credibility (DeTombe, 2000c). Before starting the problem handling process, the problem owner and the actors should be introduced to the way the problem will be guided.

## **THE SIX STEPS OF COMPRAM**

COMPRAM distinguishes six steps which are not to be confused with phases in the problem handling process (see Figure 2). In the first step, the problem is analyzed and described by a team of neutral content experts. In the second step, the different actors analyze and define the problem. The third step is where the experts and actors try to find interventions that are mutually acceptable. In the fourth step, the societal reactions of the selected interventions are anticipated. In the fifth step, the interventions are implemented. And finally, the changes are evaluated from both the original perspective and the perspective of the problem as it changed during the process.

### **Figure 2: THE SIX STEPS OF COMPRAM**

- step 1 analysis and description of the problem by a team of neutral content experts
- step 2 analysis and description of the problem by different teams of actors
- step 3 identification of interventions by experts and actors
- step 4 anticipation of the societal reactions
- step 5 implementation of the interventions
- step 6 evaluation of the changes

## **COMPRAM: A FRAMEWORK METHOD**

COMPRAM is a framework method. This means that the method provides an overall approach by which to handle the problem, rather than a detailed step-by-step specification. Different data analyzing tools and knowledge elicitation tools, such as brainstorming and interview tools, are used to elicit and analyze the data. There are methods and tools for selecting participants, for data retrieval, data manipulation, and simulation, as well as for reflecting on the results. Games, for example, can be fruitful instruments for reflecting on the consequences of an intervention. Some tools, for example the seven-layer model (DeTombe, 1994), are developed specially to support the knowledge exchange and communication between the members of the interdisciplinary teams.

The facilitator must decide what methods and tools can support the problem handling process, in addition to following the prescribed steps of the framework method, depending of the specific problem, the problem handling team, the moment in the problem handling phase, the time and money available. This demands that the facilitator has knowledge of a variety of methods and tools that can be applied. Next to methodological expertise, computer knowledge is required. Knowledge on guiding group processes and using tools is also required. The facilitator should also be able to guide group processes, be aware of knowledge confusion, power differences and emotions, and issues such as hidden agendas, envy and group-think. Group-think in decision making, which is by definition negative, occurs when the individual critical thinking of individuals is surrendered to conform to a mutual decision. In large problem handling processes, facilitators do not have to know how to perform all the support

methods and tools personally. They may be assisted by other specialized facilitators, who guide the teams with the support of a specific method or tool.

## **AN EXAMPLE OF A COMPLEX SOCIETAL PROBLEM: HIV/AIDS IN SOUTH AFRICA**

For too long, HIV/AIDS was regarded solely as a medical issue with solutions being considered only from a medical perspective. However, from the early 1990s it was already clear that the medical world did not have an adequate answer to this issue foreseeably within the next decade. The strong emphasis on a medical solution prevented fruitful non-medical interventions from being accepted and supported. This gave the problem the chance to grow to enormous proportions, especially in some African countries. Fortunately, over the last few years, the problem owners, such as the United Nations Program on HIV/AIDS (UNAIDS) and the World Health Organization (WHO), became aware that HIV/AIDS was a societal issue, albeit with medical aspects, and should be approached as a complex societal problem (DeTombe, 1994) making it amenable to being handled with COMPRAM.

Ninety percent of HIV infected people live in developing countries. Many have no access to the medical advances available in the industrialized world. However, considering the percentage of people infected by HIV and the way this epidemic affects society, the HIV/AIDS epidemic is a major threat for the developing countries. In Africa, the HIV/AIDS epidemic primarily affects the Sub-Saharan countries. HIV prevalence in South Africa is 22 percent of the adult population (NRC, 2000a). Some 300,000 people have already died of AIDS.

Acquired Immune Deficiency Syndrome (AIDS) is caused by the Human Immunodeficiency Virus (HIV). Although also transmitted by infected needles and blood transfusions, in Africa HIV is spread primarily by heterosexual contact. The fast spread of the virus is due to the frequent promiscuous behaviour of men and women. However, the fact that HIV/AIDS is mainly regarded as a heterosexual disease does not mean that homosexual men are not infected, rather that rates of transmission are greater in the heterosexual population. AIDS is a disease that can not be cured, for which there is no vaccination, and for which there is not sufficient medical treatment. The treatment that is available – to fight the symptoms and postpone death – is too expensive for most people in South Africa, even with reduced prices (NRC, 2001).

HIV/AIDS is the cause of much suffering for the men, women and children that are infected. The disease also influences the family and friends of the patients, seeing their family members and friends suffering and dying. There is a loss of family income and family care. Men and women are left without a partner after a long period of increasing illness, and children are left without parental care.

The majority of the infected people in South Africa are black. As a result of HIV, it is anticipated that the average life expectancy of black people in South Africa will drop from 62 to 35 years (UNAIDS, 2000a; 2000b; African Development Forum 2000,

2000). A large percentage of the working population will be too weak to work, and will die before reaching the age of 50. The society will be left without a large group of healthy young adults – the basis of the economy and the basis of raising the next generation. Because of its large impact the disease is a threat to the whole society.

The high degree of pregnant women who are HIV infected (in one study in Durban it was 33%) means that around 11 percent (i.e. 1/3 of 33%) of the new born babies will also be HIV infected, will develop AIDS, and will die within 7 to 9 years (UNAIDS, 2000a; 2000b; African Development Forum 2000, 2000). The HIV-negative children of the HIV-positive mothers will be confronted with an ill and dying mother within a few years. As the period between HIV infection and death is 7 to 9 years, the majority of these children will be without a mother before they reach the age of 10. Many mothers raise their children without, or with only limited support of, a man. This means that a large group of children will be without parental care at an early age. Although some family care may be assumed by grandmothers, their potential is limited. Moreover within 20 years, there will also be a shortage of grandmothers to look after the orphaned infants.

There are several reasons why attempts to reduce the rate of infection have not been successful. These include:

- ⊖ Taboo on discussing sex: Although promiscuous behaviour is regarded as normal, especially in the black community, discussing sexual behaviour is taboo. This social taboo makes awareness of, and talking about, prevention difficult.
- ⊖ Crime: The poor living conditions in homelands, townships and squatter areas lead to high rates of criminal behaviour including rape of young women and child sexual abuse.
- ⊖ South Africa is a religious country: The power of organised religion in South African society prevents discussion of the real sexual behaviour of men and women, and prevents discussion of the ways the HIV virus spreads among the population and the ways people can protect themselves. Some of the methods of protection are not acceptable to the Church in South Africa.
- ⊖ HIV/AIDS patients are stigmatised: In most parts of South Africa, sexual activities, sexually transmitted diseases in general and HIV/AIDS in particular, are not to be discussed, and are taboo. In addition, people who are HIV infected are socially blamed, stigmatised, and left alone in their suffering. This means that those who are HIV infected are not willing to disclose this fact with their family and friends, and more seriously not with their sexual partners, thus contributing to the further spread of the disease. Because of the taboo, people ignore the illness until it is no longer possible not to seek medical intervention. Culturally, most black people prefer help from a traditional healer rather than western doctors.
- ⊖ Lack of awareness of the problem: The degree of the awareness of the problem is not high. There is an avoidance of the subject. When there is not a high degree of awareness of the risks of the disease, the chances are low that people will take the necessary, but not very popular, precautions. There is also a lack of public discussion of the issue, and a failure to consider the future consequences of a society with a high rate of HIV infection and transmission.
- ⊖ Using a condom is not popular: The use of condoms is not popular, including amongst those who lead a promiscuous sex-life. It is not regarded as necessary to

protect oneself against sexually transmitted diseases, and the use of a condom is considered to be not macho. Black women have limited power and are unable to insist on the use of condoms.

- ⊖ Poverty and prostitution: The high degree of poverty and other aspects of South African society means that there is a high degree of prostitution (use of prostitutes by men, and many women who are forced into prostitution).
- ⊖ Unorthodox views and the role of government: The Department of Health in South Africa is at this moment (2001) not very efficient in handling the HIV/AIDS epidemic. There is an acceptance by some individuals in government, including the current President, Thabo Mbeki, of unorthodox views about the relation between HIV and AIDS – specifically of the Duisenberg view which suggests that AIDS is not caused by HIV but a range of other factors including drug overload. Mbeki promotes the idea that AIDS is not caused by the HIV virus, but by poverty.
- ⊖ Lack of a realistic prevention program: At present, the official HIV/AIDS promotion policy is “Abstinence, Be faithful, use Condom and take care of the Disease” (ABCD). The policy has not been very successful and it fails to appreciate the realities of sexual activity in South Africa.

Many interesting interventions to prevent the spread of HIV have been undertaken in the last five years in South Africa including the distribution of free condoms in bars, hotels and cafes, television advertisements emphasizing the danger of promiscuous and unprotected sexual contact, and some popular performers making the people aware of the issue. People with AIDS are treated in the state hospitals, although resources are limited. The interventions taken up till now, although done with the best of intentions, have not been sufficiently effective. In order to develop an effective intervention strategy, a thorough analysis of the problem has to be made with knowledge exchange between the many experts and actors.

## **A HYPOTHETICAL APPLICATION OF THE COMPRAM METHOD IN HANDLING THE HIV/AIDS ISSUE**

HIV/AIDS is a complex societal problem that would benefit from the application of the COMPRAM method. Below, a hypothetical application of COMPRAM to this issue is described outlining the six steps in the problem handling process (see Figure 2).

Step 1 involves developing knowledge about the issue. Experts in all subject areas associated with HIV/AIDS discuss the topic and develop a description of the overall problem in order to: (1) see how relevant factors are interconnected; (2) see which actors, organized and unorganized groups, and which government agencies and NGOs are involved; (3) consider the possibilities for intervention are; (4) see what the causes and effects of the problem are; and (5) analyze the past, contemporary situation and possible futures. A facilitator promotes interdisciplinary knowledge exchange. The relevant experts would include experts in healthcare, education, economics, law, psychology, sex workers, miners, religion, local, provincial and central government, as well as others. In the discussion, the experts are prompted to describe the problem in a creative way as complete as possible, covering all aspects of the problem. This step

would take a total elapsed time of about two months, representing 16 work days for the facilitator, and about 8 days for each expert. The output of this step is a report comprising an overview of main aspects and relationships of the HIV/AIDS issue in South Africa.

Step 2 is about understanding the influence of power and how it affects the problem. In this step, the problem definition of each of the actors is constructed. The problem handling process continues by inviting all the main actors concerning HIV/AIDS to participate. Actors like the insurance companies, the local, provincial and national government, industry, farmers, miners, sex workers, representatives of different religions, traditional healers, freight transporters and others. These groups are invited by the facilitator to discuss the problem among themselves, to give their own view of the problem, and to indicate what kind of interventions they will support or obstruct. This step would also take a total elapsed time of about two months, representing an additional 16 work days for the facilitator, and about 2 days for each actor. The output from this step is a report containing an overview of main views of the different actors including a statement of their power and emotional attachment towards the issue.

Step 3 is about identifying interventions that would be mutually acceptable. The experts and the representatives of actors discuss the combined possible interventions on all the aspects of the problem. This leads to a combined and mutually structured integral intervention of the problem. Elapsed time of two months, with 16 work days for the facilitator and 8 days for each expert and actor. The output is a report with an overview of main interventions on the HIV/AIDS problem in South Africa, and their correlations. The interventions could range from school and city education, better living conditions, family reunions, orphanages, medical treatment for the infected persons, and facilities for disposal of the dead.

Step 4 is the process of reflecting on the societal effects of the interventions. Before implementing the interventions, there must be reflection to see what the societal reactions to the interventions will be. This way, the interventions can be changed, if necessary, before they are implemented. The elapsed time for this step would be a further two months (16 facilitator days) and 4 days for each participant. The output is a report providing an overview of the extent of likely cooperation (complicity) and resistance to the planned interventions.

Step 5 relates to implementing the interventions. The interventions are implemented according to the implementation strategy devised of the problem handling teams. Implementation time will vary depending on the devised interventions, but could be of the order of twelve months or more. Since most of the implementation responsibility relates to the actors, the number of facilitator days will be low (allow for 20 work days in a 12 month period of implementation. The output at this stage is the successful implementation of the planned interventions.

Step 6 is an evaluation step, taking an elapsed period of two months and involving 16 facilitator days. There would be a report detailing: (1) the success or otherwise of the planned interventions in terms of reducing the HIV/AIDS problem in South Africa, (2)

how well the interventions were implemented, and (3) how effective the problem handling process was.

It is important to appreciate that going through this process, although efficient and effective, does not mean that the HIV/AIDS problem will be solved within two years. However, this approach will be the start of some fundamental changes in relation to HIV/AIDS and will likely lead to a reduction in the transmission rate, and will result in a better care for all those who are directly and indirectly affected by HIV/AIDS.

## **CONCLUSION**

The COMPRAM approach is a structured problem handling approach based on research from many disciplines. The method includes the three basic components of the problem handling process: knowledge, power and emotion. COMPRAM uses a six step approach to guide the problem handling process. Teams of experts and actors guided by a facilitator perform the problem handling process. The method can be used for all kinds of complex societal problems. This coherent, mutually-integral approach increases the effectiveness of the interventions, which leads to more sustainable solutions for lower cost. COMPRAM provides a better opportunity to involve all affected groups and to consider all possible interventions. However, in order to handle a societal problem fruitfully, the problem must be recognized as a societal problem that needs intervention at the society level, as well as a recognition that it is amenable to, and desirable for, application with COMPRAM.

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