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2.2. The concept of sustainability in modern times

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INTRODUCTION

Sustainability is a concept, related to continuity of human societies and nature. Principles of sustainability are intended for guiding human activities towards a secure future, for controlling dynamic, living systems. At all levels of society, from the immediate neighbourhood to the whole world, the life involves risks and threats. On the other hand, the life involves also opportunities to improve the security, to meet the needs of society and its members, to preserve natural values, etc. The history of sustainability is related to the well-being of human societies, sufficiency of natural resources, and preservation of ecosystems. Because sustainability refers to continuity, the renewable natural resources have been central objects in its conceptual development. Scarcity of resources is the central incentive for aiming at sustainability. Some long-term phenomena and natural catastrophes have inspired the discussion and research concerning sustainability of human societies, forests, wildlife, agricultural land, fish population, etc. Technological change, deforestation and shortage of wood, extinction of species and animal populations, soil degradation and soil erosion are examples of the long-term phenomena.

Biblically, sustainability has roots in Genesis. Conceptually as a word, its history is much shorter. It originates from the 18th century. Initially, the concept of sustainability was introduced for purposes of forest and wildlife management almost three hundred years ago. For purposes of fishing, it was developed in the first half of the 20th century as adopted from forestry or independently. Especially, the soil degradation and its prevention caused discussion on sustainable cultivation methods in agriculture in the 1930´s. The concept of sustainable development dates from the latter half of the 20th century.

The objective of this study is to examine the history of sustainability from the 17th century to the present, in modern times. The study is divided into two parts: partial sustainability and modern overall sustainability or sustainable development. The examination of the history of partial or sector sustainability is based on the traditions of sustainability in forestry. Some references are made to other partial conditions of sustainability. The discussion of the present state of affairs concerning the sustainable development is the other main concern of this study.

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BASIC APPROACH

The history and life can be understood as chains of causes and effects, although it is not possible to identify exact causal relations. The spirit of times can be understood as a framework for chains of events. In the following, the dynamics of history is interpreted by means of a triad made up of concepts: thesis, antithesis and synthesis. The thesis consists of the prevailing conditions. The future threats and opportunities make up the antithesis, they challenge the present. On the basis of the present and challenges to it, a synthesis, a more sustainable world, comes into existence. In this study, the above-mentioned triad is used as a tool for describing and analysing the history of the concept "sustainability".

SUSTAINABILITY IN FORESTRY

Cultural background

The concept of sustainability was first invented in Europe, during the Age of Enlightenment – a series of major changes that occurred in European thought in the 17th and 18th centuries. This enlightenment featured two important developments of thought:

1. The scientific revolution based on rational thinking and empirical observations. This revolution resulted in a better understanding of the physical world, which was subsequently seen as being controlled by predictable laws of nature. Because the world and nature were now regarded as machines, they could be manipulated and engineered for the benefit of mankind, like man-made machines.
2. The application of scientific thinking in the human sciences. All aspects of human life, including individual and social aspects, began to be understood in the same way as the physical world was understood. The conclusion was that all aspects of human life could also be manipulated and engineered as if they were machines.

Politically and economically, the Age of Enlightenment was preceded by a turbulent period in European life, including the Age of Discovery and the Wars of Religion. The European sea powers also started exploiting overseas natural resources during this period. The Wars of Religion could be regarded as a result of the Reformation – itself a development that led to great changes in European thought and politics.

In general, absolute monarchies and centralised governments were the political instruments used to resolve instability in European nations. The guiding political principle was political absolutism. Economically, governments followed mercantile doctrine. In German-speaking regions, this economic doctrine was known as *Kameralismus,* although it had a different emphasis than other contemporary European systems, because of their political structure and continental geographic position.

The legitimate goal of national governments was the pursuit of wealth. Political efforts to promote a favourable balance of trade were an essential feature of mercantilism. Trade surpluses in terms of reserves of precious metals were particularly respected as expressions of national wealth. From this point of view, mining, both at home and overseas, and merchant shipping were crucial activities. Merchant fleets needed to be protected by navies against piracy and other hostilities. The promotion of domestic manufacturing and the resulting urbanisation were direct consequences of mercantilist policy.

Mit Gott!
SYLVICVLTVRA OECONOMICA,
Oder
Hauß-wirthliche Nachricht und Naturmäßige
Anweisung
Zur
Wilden Baum-Zucht
Nebst
Gründlicher Darstellung/
Wie zu förderst durch Göttliches Benedeyen dem allenthalben und insgemein einreissenden
Grossen Holtz-Mangel/
Vermittelst Säe- Pflantz- und Versetzung vielerhand Bäume zu prosperiren/
Vorbey zugleich eine gründliche Nachricht von den in Churfl. Sächs. Landen
Gefundenen Turff
Dessen Natürliche Beschaffenheit/ grossen Nutzen/ Gebrauch und nützlichen Verkohlung.
Von
Hannß Carl von Carlowitz/
Königl. Pohl. und Churfl. Sächß. Cammer-Rath und Ober-Berg-Hauptmann.
Mit Königl. Pohl. und Churfürstl. Sächs. allergnädigsten PRIVILEGIO.
LEIPZIG/
verlegts Johann Friedrich Braun 1713.

Fig 1. The title page of Hanns Carl von Carlowitz's "Silvicultura Oeconomica" provided a lot of information on its contenst.

Consequences in forestry

All this led to the increasingly rapid exploitation of domestic natural resources, especially forest resources. Wood was needed for mining, shipyards, construction, manufacturing, and household consumption. The results of this included the deforestation of large areas, and widespread shortages of wood. The deforestation of the Mediterranean countries and the British Isles culminated about this time, and the shortage of wood became an acute political problem. In Britain, the Navy Board enlisted the help of the Royal Society after the Dutch naval wars. The Society commissioned the English intellectual John Evelyn to write a book on silviculture. In 1664 he published the article "Sylva, or A Discourse of Forest-Trees and the Propagation of Timber in His Majesty's Dominions", in order to promote silviculture and timber production. (Johnston et al. 1967). The Minister of Finance of Louis XIV, Jean Baptiste Colbert, was meanwhile implementing a great forest reform *Grande Réformation des Forêts* on 1661 (Grober 1999, Parde 2003), starting-point of which was the naval policies of the "Sun King". The shipyards in Brest and Cherbourg were in need of great quantities of wood for shipbuilding.

In Germany, in Saxony, the Director of Mines Hanns Carl von Carlowitz first presented the concept of sustainability in his "Sylvicultura Oeconomica oder Hauswirthliches Nachricht und Naturmässige Anweisung zur Wilden Baum –Zucht" in 1713 (Carlowitz 1732, Huuri et al. 1989), by proposing "*continuirliche, beständige und nachhaltende Nutzung*" (continuous, permanent and sustainable utilisation) as the rule for forestry . The sustainability expressed in his book aimed at saving Europe (society) from the economic and social disaster, which would ensue if wood ran out, preserving and strengthening the Christian culture and the wonders and beauty of nature. Thus, the concept of sustainability has had the threefold meaning from the beginning: economic, social and ecological sustainability.

Conceptual development of sustainability in forestry

Forestry instruction at university level started in Germany in the beginning of the 19th century, first in Tharandt, Saxony, in 1816, and then in 1830 in Eberswald, Brandenburg-Prussia. German forest researchers adopted the concept of sustainability already in the 18th century, and the term *Forsteinrichtung* (forest management) dates back to the 1760s. Sustainability soon became a central object for theory and research. On of the most important milestone in this field was the publication of "Anweisung zum Waldbau" by Heinrich von Cotta, from Tharandt, in 1817. This work was later published in English in the Forestry Quarterly, Volume I, 1902-1903, and it has been considered as a cornerstone of the whole field of sustainability.

Already earlier at the turn of the 19th century, Georg Hartig (1804) defined sustainability as the main obligation of any forest administration as follows:

> "*Die Taxation der Forste, oder die genaue Bestimmung des gegenwärtigen und künftigen nachhaltigen Holzertrages der Waldungen, oder die Errichtung eines zuverlässigen Natural-Forest-Etat's, ist unstreitig einer der wichtigsten Gegenstände im höheren Forstwesen; denn es lässt sich keine dauerhafte Forstwirtschaft denken und erwarten, wenn die Holzabgabe aus den Wäldern nicht auf Nachhaltigkeit berechnet ist.*
>
> …
>
> *Jede weise Forstsdirection muss die Waldungen des Staates, ohne Zielverlust, taxieren lassen , und sie zwar so hoch als möglich, doch so zu benutzen suchen, dass die Nachkommenschaft wenigtens eben so viel Vortheil daraus ziehen kann, als sich die jetzt lebende Generation zueignet*"

This translates freely into English: "Forest mensuration and forest management planning, or to determine exactly the present and future sustainable cut, or to establish a trustworthy cutting budget, is, indisputably, one of the most important responsibilities in any forest administration. …. Every wise forest administration has to draw up such sustainable forest management plans that allow so high utilisation rate of forest as possible, nevertheless, so that the administration looks after interests of future generations so that a fair distribution of interests between the present and future generations will come true". This can be understood as the Golden Rule of sustainability in forest management. Sustainable forestry is based on the forest management and forest policy, on the regulation of the utilisation of forest resources in time and place. Modern administration agencies were established according to the German models in many countries in the 19th century (Gylden 1853, Fernow 1911). Originally, they were aimed at introducing sustainable use of forest resources. The supervision of hunting and fishing in lakes and rivers also belonged to their responsibilities (Hartig 1833). The formal forest administration of the time came from the authoritarian Europe, but also in the libertarian United States, an authoritative forest administration was created at the end of the 19th century (Fernow 1911).

Although the original idea of sustainability had three elements, conceptual planning methods and sustainability criteria were started developing for a one-dimensional sustainability, for timber production. Conceptually, a forestry plan is a solution, which fulfils a chosen performance index of forestry during some period, to a dynamic two-point boundary value problem. The initial state of forests connotes the starting boundary, and the ideal or desirable forest the terminal boundary. The basic methods and criteria were introduced at the end of the 18th century and during the 19th century (Lihtonen 1958). At the beginning, the ideal or terminal forest was a forest with even age-class distribution, a normal or synchronized forest. First, criteria concerning

Photo: Pekka Nygren

Fig. 2. An early idea of sustainable forestry, normal or synchronized forest, states that a management unit should be composed of even-aged stands so that stands of each age class cover equal area.

the age distribution of stock variables, areas and growing stocks, and their adjustment to the ideal forest were developed. Second, criteria for the desirable temporal distribution of flow variables, i.e. for cutting regulation were developed. Third, these two aspects were combined. Fourth, the stand method was developed. Its basic idea is that all forest stands are managed independently on each others and that the management is based on the biological and ecological characters of the stands. The optimum rotation period is the most important criterion of the stand method. The rotation period giving the maximum soil rent is perhaps the best known criterion of the stand method.

During the latter half of the 19th century and in the 20th century, planning methods and sustainability criteria for timber production were developed further by combining the basic approaches and by introducing more and more advanced calculation methods. The most important sustainability criteria were the allowable cut and its relation to the forest growth. The concept of desirable forest was introduced instead of the normal forest as an ideal of sustainability. Calculability and calculation techniques have always been the essentials of planning forest management and forest policy. Already in the 19th century, the first three classical methods were named according to the computational techniques: *Flächenfachwerk* (area allotment method, method by area), *Massenfachwerk* (volume allotment method or periodic method by volume), and *kombinierts Fachwerk. Das Fachwerk* means a latticework or a framework in which the calculations were carried out.

The first plans were made up for very long time spans. Hartig has planning periods of 180 years in his book (Hartig 1805). Another example is a tentative plan for a forest estate in Finland outlined by Gyldén (1853) for the years 1854 – 2013 divided into ten-year-periods. Although the plans were made up for textbooks they indicate the optimistic confidence of professionals in the applied theories and planning methods in

the spirit of the Enlightenment. Unpredictable exogenous phenomena like timber market fluctuations, technological change, social mobility, biotic and abiotic damages, etc. have proved to be permanent problems in forest planning and compilation of sustainability indicators for timber production.

At the end of 20th century, the three- or four-dimensional sustainability was introduced into forestry as a result of the process to be described in the next section. The process led into multifunctional forest planning and multidimensional sustainability indicators. The triad of economic, ecological and social sustainability consisted of the central topic of conservation and research in forestry. Indicators were and are developed in numerous events at all possible levels of authority, formal and informal. One example of these events and their achievements is the Intergovernmental Seminar on Criteria and Indicators for Sustainable Forest Management held in Helsinki, August 19 – 22, 1996, and it reports (ISCI 1996).

Technically, forest management planning and forest policy planning have changed drastically because of computerisation of calculation works and improvements in measurements, etc. One example of the most advanced computerised approaches to the forest management planning is the MELA-software compiled by the Finnish Forest Research Institute (Redsven et al. 2004). It consists of two parts, the creation of the opportunity set of feasible forest stand developments and of the determination of the optimum forest management plan from the chosen opportunity set. The core of the first part is the simulation of the stand dynamics. It is based on growth models and heuristic considerations. The second part is an application of a linear programming package (Lappi 1992). Sustainability conditions are taken into account in the simulation of the opportunity space and by means of the optimisation parameters.

Over the last two hundred years, sustainability has been a very central factor in forest management and forest policy. The actual content of the concept of sustainability has been the object of continual research and debate. In the beginning, sustainability of forestry was a professional, authoritative, and authoritarian view about the state of affairs. Two hundred years later, the view about sustainability in forestry is more multi-faceted, more democratic, and less transparent.

SHORT REFERENCES TO SUSTAINABILITY IN WILDLIFE MANAGEMENT AND FISHERY

Hunting has probably been regulated always. Game management's roots goes back to the very early forest management at the turn of 19th century (e.g. Hartig 1833). Aldo Leopold, an American forester with German background, is regarded as a founder of the science of wildlife management. He also formulated sustainability as a fair distribution of interests between the present and future generations (Grober 2002). He was among the first who emphasized explicitly the multidimensional character of ecosystems, i.e. interactions between different organisms. This aspect has been very influential in conservation biology and practice.

Fish and whale populations, as all biological populations or stocks, have a capacity for increasing and a natural rate of mortality. If these two tendencies are balanced, the populations remain in equilibrium. Traditionally, management in fisheries and whaling has been based on the concept of maximum sustainable yield (MSY) (Clark 1976). The concept of MSY is based on the assumption that at given population levels a surplus production exists, which can be harvested in perpetuity without altering

the population levels. Because of the inadequacies of the MSY concept, it has been replaced in economic and social frameworks by the concept of optimum sustainable yield (OSY). But, it has the same built-in sustainability requirement. In chapter 3.1. of this book, Karjalainen and Marjomäki give a good presentation on the recent thinking concerning sustainable fisheries management. Historically, most marine fisheries have hardly been "managed" in the economic sense of the word. Some of them have been subject to a certain control by various countries and international agencies. However, the countries in question do not possess management authority to the whole resource or the agencies do not possess full management authority. An interesting agency is the International Whaling Commission (IWC; Clark 1976). The IWC was set up under the International Convention for the Regulation of Whaling signed in 1946. The purpose of the Convention is to provide for the proper conservation of whale stocks and, thus, enable the orderly development of the whaling industry (IWC 2005). In fact, it can be said that the purpose is economically, socially and ecologically sustainable whaling. Procedures of the IWC are common to many other international agreements concerning sustainable development and modern sustainability.

MODERN SUSTAINABILITY

Early signs of discontinuity

A mission of the Age of Enlightenment was the full-scale utilisation of global natural resources, as set out by Adam Smith (1776). This level of resource utilisation has subsequently been realised in our times. However, this has not resulted in the kind of global welfare that thinkers in the 18th and 19th centuries and after the World War II had envisaged. There were many warning signs.

Prior to the World War II, the world experienced the Great Depression (Ellis 1970). Generally, this term is connected to social and economic disaster, unsustainability. However, it was lengthened and aggravated by an ecological catastrophe in the United States, mainly in the Southern Plains. Inappropriate agricultural practices and years of drought caused the phenomenon called the Dust Bowl of the 1930's. John Steinbeck wrote a very famous novel "The Grapes of Wrath" in 1939 describing economic and social consequences of this economic and ecological catastrophe. The Dust Bowl was an important reason why The New Deal launched by the administration of the President Franklin D. Roosevelt had an environmental component like the activities of The Civilian Conservation Corps.

In the 1960's two influential books were written, "Silent Spring" by Rachel Carson (1962) and "The Population Bomb" by Paul Ehrlich (1968). They raised public awareness of the linkages between economic, social and environmental considerations. At the beginning of the 1970's, the Peruvian anchovy fishery collapsed because of the coincidence of overfishing and the *El Niño*-phenomenon resulting in economic, social, and ecological disaster (Clark 1976). Deforestation, soil degradation, and soil erosion in interaction with poverty were going to be characteristics of new independent countries which later were called the Third World or developing countries. The division of the world into two parts was evident: rich welfare states and poor developing countries. The economic, social, ecological, and political demarcation lines coincided with each others. Economic insecurity and inequality were believed to cause political and social instability, and environmental problems.

Global goal: create of welfare and improve environment

The developments of the welfare state in European industrial democracies originated from the Bismarckian social insurance, and went through a rapid expansion period after the World War II. Social insurance that began in Europe in the 19th century is an expression of a European social welfare tradition. It was first adopted in Germany in 1889. The aim of the social insurance systems were and are to create economic security, and social and political stability and, from the point of view of an individual citizen, make his or her life as predictable as possible. In the middle of the 1930's, there were more than 30 nations that had some form of social insurance programme (De Witt 2003). According to the ideal model of the welfare state, the state assumes primary responsibility for the welfare of its citizens. This responsibility is comprehensive because all aspects of welfare are considered. However, the concept of the welfare state has been controversial. There is a continual debate over governments' responsibilities for their citizens' well-being. The debate can be illustrated by the dichotomy of the communitarian and libertarian ideas. The communitarian view of welfare emphasizes common efforts through the state or other public agencies, and traditionally, communitarian ideas are supported in the continental Europe and Scandinavia. Libertarians advocate the maximisation of individual rights and efforts. Especially, competitive markets are seen as processes that create welfare and environmental sustainability in a fair and effective way. Traditionally, libertarian ideas are supported in the Anglo-Saxonian world, especially in the United States.

Introduction of modern sustainability

Over the last three decades, global concerns about poverty, increasing inequality, environmental problems, limited natural resources and other related problems have been increasing. The concept of sustainability was reintroduced in this new context. The Club of Rome significantly used the term in the 1972 report "The Limits to Growth" (Meadows et al. 1972). The report defines the solution to the problem as follows: "*The definition of the state of global equilibrium is that population and capital are essentially stable, with forces tending to increase or decrease them in a carefully controlled balance*."

The most recent initiatives to extend and elaborate the concept of sustainability have been made by the report of the World Commission on Environment and Development (WCED) or the Brundtland Report also known as Our Common Future (UN 2005). It manifested sustainability explicitly as a three-dimensional concept: economic, environmental and social. According to the Brundtland Report, sustainability is: "*Meeting the needs of the present generation without compromising the ability of future generations to meet their needs*." This definition obliges the present generation to anticipate and consider the effects of its actions on the life of future generations.

The term "sustainable development" was adopted by the United Nations Conference on Environment and Development (UNCED, 2005) 1992 in Rio de Janeiro, Brazil. Historically, the UNCED was a descendant of the United Nations Conference on the Human Environment 1972 in Stockholm, Sweden. The following five agreements are associated with the UNCED:

1. Agenda 21 is a broad statement of goals and potential programs related to sustainable development;
2. Rio Declaration is a brief statement of principles on sustainable development;

3. Biodiversity Treaty is a binding agreement aimed at strengthening national control and preservation of biological resources;
4. Statement of Forest Principles is a non-binding agreement on development, preservation, and management of the Earth's remaining forests; and
5. Framework Convention on Climate Change (UNFCCC) is a binding international agreement that seeks to limit or reduce emission of greenhouse gases, which have the potential for causing global warming.

Under the umbrella of these agreements, innumerable events have taken place since the year 1992 in order to define sustainability and behavioural rules for realising it. These events have had participants from all possible levels of authority from all over the world. Perhaps the most remarkable events have been in Kyoto in 1997 and in Johannesburg in 2002. The Kyoto Protocol is an amendment to the UNFCCC negotiated and opened for signature in Kyoto. The before-mentioned multitude of events has been organised with the intention of facilitating developing countries to meet their problems, regulating green house gas emissions, allocating fairly the use of global natural resources; briefly, implementing global sustainable development. Due to the unsatisfactory progress in implementing sustainable development since 1992, the UN arranged a conference in Johannesburg in order to support and strengthen efforts to implement sustainable development.

Experiences in implementation

As a concept, sustainable development is very young, 10 – 15 years, and as a goal of global policy, it is even younger. At the present, it is not possible to discuss its implementation as a historical fact but some observations about experiences can be made.

One of the most remarkable achievements is the increased awareness of lack of sustainability. This has taken place through scientific research, political and administrative processes, and public debate. Ecological research and mapping of life forms have got significant dimensions (Kaiser 1998, Miller 2005, Roberts et al. 2002, van Jaarsveld et al. 1998, Venter et al. 2004), especially in so-called biodiversity hotspots like the transitional zone between the Andes and Amazonian basin in South America (PROFONANPE 2001, Rodríguez 2001). It is too early to assess at the global level how the increased information and knowledge has changed behaviour. Locally, it has had positive effects especially in industrialised countries. However, it is a fierce work to derive specific behaviour rules from very general objectives.

The term of sustainable development has been questioned because it emphasises economic growth. It is understood to consist of ever-increasing economic growth in terms of real incomes and output. It is in accordance with the Pareto-principle that is an important background assumption of social sustainability and social policy. In a growing economy, it is possible that a legitimate welfare improvement occurs making at least one person better off, without making others persons worse off. After all, the ultimate question is how to reconcile ever-increasing material output and sustainable use of natural resources.

The life in our planet has got features of a zero-sum game. This is due to the fact that it is politically very difficult to find a fair incidence of burden of implementing programmes for sustainability and sustainable development. At bottom, this consideration is the primary cause for why e.g. accepting, signing and ratifying negotiation results have been very complicated in many cases, at local, national and

global levels. It has also undermined commitment of many parties to agreements and conventions in force. The Kyoto Protocol is a good example of problems to find acceptable behaviour rules to reduce emissions of greenhouse gases. Often, the demarcation line is between the traditionally communitarian world and the traditionally libertarian world, although this line is getting fuzzier than in the past.

A SYNOPSIS OF THE HISTORY OF SUSTAINABILITY

Sustainability is a social norm. It is a shared expectation of behaviour that indicates what is considered culturally desirable and appropriate. It is a moral rule or a set of moral rules. It can be regarded as an global Golden Rule: “Meet the needs of the present generation without compromising the ability of future generations to meet their needs”. In the real life, there are epistemological and moral preconditions for realising sustainability: to know and accept the needs of all parties of the present generation; to know and accept the needs of the next generations; and to anticipate the effects of the present actions on the future chains of events.

Sustainability is a systemic concept. The background systems, forestry, wildlife, fishing, national economies, entire planet, can be illustrated by means of implicit or explicit models. Modelling aims at understanding, explaining and predicting of phenomena. Relevant models are open, dynamic, multidimensional (multiple sectors, multiple species, multiple cohorts, etc.), and interactive, they include nonlinear feedback relations. In brief, they are complex.

Pursuit of sustainability involves anticipating and considering the economic, ecological and social effects of today’s actions on the life of fellow men, and on the life of future generations. Initial value sensitivity of the models and intervening exogenous phenomena cause that reliability of forecasts is deficient (Coveney and Highfield 1995, Ekeland 2004, Parker and Stacey 1997), especially in the long term. Even the most simple feedback relations are sensitive to the accuracy of initial values (Holton and May 1993). This is often due to inaccurate and disputable observations and measurements. There are many overlooked or otherwise unpredictable intervening phenomena like introduction of new technology and its economic, social, and ecological effects; ecological phenomena such as El Niño, the Dust Bowl, drought periods, hurricanes; political and social events such as wars, terrorism, migration, or unification of nations.

Disputability of assessment of the situation, deficient ability to forecast, and moral obligation to sustainability are reasons to interactive political and social processes that create new assessments of the situation, new forecasts, new norms and behaviour rules for guiding human activities for a secure future. The assessments, forecasts, norms, and rules can be regarded as political and social contracts or agreements, as results of interactive powers (Gauthier 1986). They are outcomes of game-theoretic constellations, and they are based on the real distribution of power in contrast to the idealised classical social contract theories of Hobbes, Locke and Rousseau. The real power having an influence on these contracts has many manifestations: political, social, economic, military, scientific, and technological.

Fig. 3. Hauling logs in a Mexican village; creation of employment to local people is an important dimension of socially sustainable forestry.

Photo: Seppo Vehkamäki

CONCLUSIONS

The definition of sustainability has been almost the same during the last 200 – 300 years. The formulations of sustainability presented in this study — von Carlowitz, Hartig, the Maximum Sustained Yield, the Club of Rome, and the Brundtland Report — are almost identical. The biggest dissimilarities result from the usage. However, the subject matter and geographical scope of application have increased during that time. The modern concept of sustainability has three dimensions: economic, social, and ecological. A world-wide implementation is implied again and again. The ultimate question is how to reconcile conflicting interests. Increased information and knowledge seem to be the most effective methods for solving this problem. Sustainability is under serious political discussion and a lot of important scientific research is being carried out in order to clarify its background and substance, although it is much used as a political cliché. The sustainability rules in force are based on the prevailing knowledge and moral (political) orientation, and the real distribution of power. Because they change as time goes on, the political, social, and scientific interactions generate over and over again new norms and rules intended for achieving sustainability. Access to relevant knowledge, ability to empathy, and transparency of political processes are essential preconditions for sustainability. We are still, perhaps always, in the early stages of understanding what sustainability means in the everyday life.

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