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**ECONOMIC DEVELOPMENT  
AND ENVIRONMENTAL PROTECTION  
- THE NEED FOR MORE EQUAL  
INCOME DISTRIBUTION FOR ACHIEVING  
SUSTAINABLE DEVELOPMENT FROM  
AN ECONOMIC AND FAIRNESS PERSPECTIVE**

**1. Introduction**

This paper addresses the general question of whether a more equal distribution of income and sources stimulates sustainable development. With respect to this a distinction has to be made between income and resource distribution within countries and income and resource distribution between countries. More specifically, the questions will be addressed as to whether a welfare state with low income inequalities is fit for sustainable development, and whether the current inequalities on a global scale are sustainable. With respect to enlargement of the European Union this question is very relevant. Will there be a rich EU with poorer countries at its borders, or will those poorer countries be included, so that the inequalities between countries and regions become smaller. The question of whether more equality leads to a more sustainable development is put in the light of the theories of justice of Sen, Mill, Roemer and Rawls.

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## 2. Sustainable development

In order to answer the question of what is the relation between income and resource inequality and sustainable development, it is first necessary to come to a working definition of sustainable development. In general, human beings are the most important in concepts of sustainable development. This is in accordance with the "western worldview" [Westerhof, 1989]. Westerhof shows that in other cultures a more eco-centric approach could be found, opposed to the current anthropocentric approach. In so-called "primitive cultures" with no written history man was seen as part of nature, and man can use natural resources under supernatural supervision. This culture / way of life leads to a more thoughtful use of natural resources, using not more than is necessary for life. Classical Taoism (based on the thoughts of Chinese philosophers like Lao Tse and Tsjwang Tse) assumes the equality of all things and phenomena. This means that we respect our natural environment as a goal in itself, as well as a means for the realisation of our goals. In this respect classical Taoism takes a position between eco-centrism and anthropocentrism.

Agenda 21, an important source for defining sustainable development, states that "Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature" [Rao, 2000, p. 11]. This principle underlines the anthropocentric nature of sustainable development.

However, as Rao [2000], argues, a totally anthropocentric approach will at some point reach a critical stage with respect to source and sink problems. Another point with respect to eco-centrism and anthropocentrism is the question of what we want to sustain. Eco-centrism rather looks at the implications of human activities on the eco-system, while anthropocentrism assumes all human activities as primarily in the interest of human beings. In this sense survival and development of mankind is the most important, even in a completely different ecological setting.<sup>1</sup>

Before coming to a definition of sustainable development, it may be useful to discuss some concepts of sustainability and non-sustainability. Resilience of a system may be a good indicator of sustainability. Resilience is "the buffer capacity or the ability of a system to absorb disturbances," and when "the threshold of a sink is passed," this can mean that sources needed for life of species can be under threat [Rao, 2000,

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<sup>1</sup>A theme which is the subject of many science fiction stories.

p. 75]. When this threshold is passed, there can be irreversible damages. An example is excessive groundwater extraction. When this renewable resource is overused, the source can dry up. This source depletion has in history led to wars and the fall of whole civilisations, while currently being a big problem in many countries, a problem expected to increase during the next decade in most parts of the world due to increased production and consumption.

Man lives in an ecological system. Ecology itself is "the study of structure and its functions of natural environment" [Rao, 2000, p. 77]. Rao defines ecological capital as "an all-encompassing concept of natural capital" [Ibid.]. This ecological capital has four functions:

1. Provision of resources for production and raw materials.
2. Absorption of wastes from production processes, as well as consumption processes.
3. Basic survival infrastructural services like climate, radiation effects, and ozone shield.
4. Recreational services and goods.

In ecological economics a commonly accepted definition of sustainability is that it is a relationship between dynamic economic systems and larger dynamic, but normally slower-changing ecological systems, and an important feature is that human life can continue indefinitely, human beings can flourish and develop their cultures within the boundary constraints of keeping the ecological system that supports life with its diversity and complexity intact [Costanza et al., 1991].<sup>2</sup>

This definition implies a notion of individual self-fulfilment and justice. Although sustainable development has economic, social and environmental features, economic features are often emphasized. The economic aspects of sustainable aspects were expressed in the Rio Declaration of the Earth Summit of 1992 ("Economic Principles") as follows [Rao, 2000]:

1. The right to development must be fulfilled so as to equitably meet the developmental and environmental needs of the present and future generations (Principle 3).
2. All states and all people shall co-operate in the essential task of eradicating poverty as an indispensable requirement for SD, in order to decrease the disparities in standards of living and better meet the needs of the majority of people in the world (Principle 5).

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<sup>2</sup> Constanza, R., Daly, H.E. and Bartholomew, J.A., "Goals, agenda, and policy recommendations for ecological economics", in: R. Constanza (ed.), *Ecological Economics - The Science and Management of Sustainability*. New York: Columbia University Press, pp. 1-20, 1991. Mentioned in Rao [2000, p. 83]

3. To achieve SD and higher quality of life for all people, states should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies (Principle 8).

These principles include economic development in addition to sustainability. Todaro [1997, pp. 16–8] distinguishes three main objectives of development: sustenance – the ability to meet basic needs, self-esteem – to be a person, and freedom from servitude – to be able to choose. Thus, those objectives are a minimum requirement for economic development. First of all, “basic life-sustaining goods” like food, health and safety should become available and accessible for more people. This should be accompanied by an increase in the standard of living, which includes higher incomes, employment, education, cultural and humanistic values, etc. Finally, the economic and social choice set should be expanded, increasing the freedom to choose and freedom from oppression, ignorance and human misery. A philosophical base will be provided in the next section, while section four will explore more practical economic relationships. The philosophical base is provided using Sen’s notions of human diversity, “basic capabilities,” and means to freedom, as well as John Stuart Mill’s notion of equal opportunities, John Roemer’s argument for an initial equal distribution of factors of production and John Rawls’ two principles of justice – equal basic liberties for everyone and the maximin principle.

A commonly used definition of sustainable development is “development that meets the needs of the present without compromising the ability of **future generations** to meet their own needs. It contains within it two key concepts: the concept of “**needs**,” in particular the essential needs of **the world’s poor**, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.”<sup>3</sup>

Rao [2000] argues that most of the time the intra-generational aspect (future poverty) is addressed, not inter-generational poverty (current inequalities). This may be connected with the observation that people care more for their offspring and direct environment than for what happens farther away from home. A problem is that the needs of future generations can only be estimated by help of current knowledge, thus there is uncertainty. Current income distribution is of importance for sustainable development, because property rights determine the distribution of income, and the distribution of income determines consumption and production decisions which in turn influence the sustainability of development.

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<sup>3</sup> Brundtland Report, quoted in Rao [2000].

In order to determine what sources should be left for future generations, Rao uses a broader definition of capital than is used normally. Capital can be man made (manufactured), natural (non-renewable and renewable resources, in fact ecological capital), human (health, knowledge, etc.) and social (culture, institutions, co-operative behaviour, trust, social norms, participation in decision-making, etc.).<sup>4</sup>

In order to answer the question of what should be preserved, the question is whether natural and social capital are close substitutes, what geographical area is taken into consideration, what local and regional dimensions of ecological and economic dependencies have to be taken into account, what is the time range considered, who are the inter- and intra-generational winners and losers, etc. Furthermore, following Rao, it should be established whether we should follow strong or weak sustainability. Strong sustainability means keeping every part of the different types of capital intact, while weak sustainability means keeping the total amount of capital intact irrespective of the change in type of capital – e.g. manufactured capital may replace natural capital. In other words, the value of total capital should remain at least constant in time, while strong sustainable development implies that each part of total capital remains the same forever. In the long-run in a dynamic system with technological development and ongoing evolution sustainable development will rather be weaker, while it may be stronger in the short-run.

### 3. Fairness and sustainable development

Above, it was argued that eradicating poverty is an important condition for stimulating sustainable development, lowering problems of environmentally unsound production and consumption. This implies a more equal income and resource distribution. However, when inequalities become too small, it can provide disincentives for technological development that can lead to more environmentally-sound production. The equality of resource access and income distribution can be put in a broader framework of the question “equality of what” [Sen, 1987, 1992].

When striving for equality, there is a range of variables that can be assessed on equality. Equality can concern equality of outcome, mea-

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<sup>4</sup>This definition of social capital comes very close to what North [1990] calls informal institutions. Institutions are formal and informal rules of the game in a society. Formal rules are the system of property rights, the legal system, etc. Informal rules consist of culture, norms of behaviour, ideology, etc. These rules of the game influence the “play of the game” of economic or other human activity, thus whether human activity will lead to sustainable development.

sured in money terms, equality of utility, equality of freedom, equality of opportunity, equality of resource base, etc. Sen [1992, p. 31] places the question "equality of what" in a general framework. First of all, a person's position in a social setting can be assessed from two perspectives:

1. What is achieved in reality, which can be described with a vector of outcomes. This concerns things that we try to achieve.
2. The freedom to achieve, which generates a vector of liberties. This concerns the real opportunities to achieve what we value.

With respect to the second point, Sen distinguishes between *freedom* and *means to freedom*. The extent of a person's freedom is the freedom to realise the consumption of alternative consumption bundles that can be obtained with the available budget. Means to freedom influences the freedom to choose. An example of means to freedom is freedom from illness, hunger, insecurity, in other words, means to freedom concern primary goods [Sen, 1992, p. 36].

As will be discussed in the following section, the struggle for basic goods and the aim of increasing material well-being often lead to unsustainable production patterns. Furthermore, the provision of those basic goods is often an aim in itself besides the fairness aspect – improving human capital by improved nutrition, health, education, etc. providing positive externalities for society.

Human diversity, expressed in personal and social characteristics,<sup>5</sup> can lead to substantial variations of primary goods as means to freedom for the generation of outcomes. In general, Sen does not consider the comparison of the availability of primary goods as a basis for the comparison of freedom. The same primary good can lead to different outcomes for different people [Sen, 1992, p. 38].

When striving for freedom, we are confronted with two types of diversity: (1) the heterogeneity of human beings and (2) the amount of variables we can assess on equality. Human diversity concerns two things: External Characteristics (ec), like inheritance, natural and social environment, and Personal Characteristics (pc), like age, sex, physical and mental capabilities [Sen, 1992, p. 2].

The discussion above can be expressed by three vectors:

1. A vector of outcomes expressed as  $r_i$  the results for an individual. This concerns income, wealth, resources, rights, quality of life, etc.
2. A vector of freedoms that are needed to achieve the outcomes,  $f_i$ . This concerns freedom and means to freedom.

<sup>5</sup>Social characteristics are a part of external characteristics.

3. A vector of human characteristics,  $e_i$ , which consists of personal and external characteristics.

$$r_i = (r_1, r_2, \dots, r_n)$$

$$f_i = (f_1, f_2, \dots, f_n)$$

$$e_i = (ec_1, ec_2, \dots, ec_n, pc_1, pc_2, \dots, pc_n)$$

The problem that Sen touches upon is a projection of human diversity (e) on opportunities for freedom (f) and outcomes (o). In order to measure and assess inequality a variable has to be chosen. This can be welfare, happiness, income, freedom, etc. Due to the heterogeneity of human beings, according to Sen, there is a "trade-off" between the different variables that can be the aim of equality. In other words, striving for equality leads to inequality in another variable. Thus, the inequality in one variable is based on the justification of equality in another variable. This implies a hierarchy of justice, and the question has to be addressed as to whether equality in one variable is more fair than equality in another variable. When we, for example, try to assess the fairness of income inequality, human diversity poses problems [Sen, 1992, pp. 19, 29]. When two people obtain the same income, but one of the two, due to a handicap, is forced to buy a wheelchair, then, depending on the individual utility function, inequality in well-being can appear.

Another example of a trade-off between variables is striving for a more equal distribution of income and more freedom. Thus there is a plurality of variables. Furthermore there may be problems with measuring inequality. A measurement of inequality can never be complete, among other things due to incomplete and asymmetric information, competing interests and opportunistic behaviour in the presentation of "facts", measurement problems, etc. This makes assessment of inequality very difficult [Sen, 1992, pp. 131–6].<sup>6</sup>

<sup>6</sup> Freedom, besides having positive aspects, can also be costly. This concerns decision costs in the form of spent time that could be used differently, or the cost of taking responsibility [Sen, 1992, p. 57]. A larger choice set, besides an increase of the freedom to choose, can also mean a cost in the sense of more obligations to make a choice [Sen, 1992, p. 63]. In other words, there are transaction costs connected with making choices. When the choice set becomes too big, people can resign from making a choice (imagine a shop with 300 types of washing powder). Furthermore, the size of the choice set that is "optimal" for an individual also depends on preferences. Decision-making is a learning-process, when the choice set increases too fast, this may lead to problems for individuals or organisations faced with a radical change in reality.

Summarising, the question is what we consider to be objects of value, and what values have to be assigned to those objects. By assigning value to objects, we obtain an evaluative space [Sen, 1992, pp. 42–3]. This leads to the necessity of selection and giving relative weights to different variables. It is doubtful whether a complete ordering can be achieved. The task is to choose a variable that is considered to be more important than other variables for evaluating equality.

### Three concepts of fairness

Below three concepts of fairness will be discussed according to the ideas of John Stuart Mill, John Roemer, and John Rawls. Mill's central point is individual equality of opportunity. This implies that everyone in the initial position has the same access to the means that are needed for self-realisation. This can imply changes in social institutions that influence the distribution of means. Roemer [1982, 1988] and Rawls [1973] opt for equality of opportunity in a different form. Roemer argues that an unequal division of means is the result of an initial unequal distribution of means of production. By way of the Marxist concept of exploitation, which he places in a neo-classical equilibrium model, he pleads for a market economy with an equal initial division of means of production. John Rawls is rather an exponent of the thought that certain basic liberties are the most important, and that after this has been achieved, inequalities are only justified when they are advantageous for the least-well off. Sen criticises Rawls with the argument that people principally differ. Mill, Roemer and Rawls can be placed within Sen's "axiomatic approach," and in fact with striving for equality there is the problem of maximising one variable under constraints.

### Mill

Mill [1863] argues for an as extensive as possible development of human capabilities. This he tried to combine with the idea that each individual strives for maximisation of individual happiness, to be expressed in utility units. This utilitarianism, according to Mill, can serve to determine what is a fair distribution of means. In a fair society all citizens have an equal right on self-fulfilment, which implies that all citizens participate in political power. It is the task of the state to make possible and stimulate participation in the political process. With this argument Mill in fact legitimises state intervention in the economy and society [Meijs and Jansen, 1990, p. 18]. Also the term freedom is defended by Mill [1859] in utilitarian terms. Freedom concerns here freedom of

speech, freedom from paternalistic legislation, respecting someone else's safety, etc. He saw the development of individual character as a vital element of utility. Personality is a part of happiness; only a person that feels that his thoughts and feelings are really his own can be really happy [Ryan, 1987, p. 469].

Besides political rights and freedom, individual fulfilment of capabilities demands socio-economic equality of citizens. Unequal distribution of property, according to Mill, limits an equal and effective right on self-fulfilment for many. Mill did not consider the free market and private property of means of production to be the cause of this inequality. The unfair distribution of property of his time he saw as a consolidation of the property relations from feudal times, that were protected legally [see Mill, 1848]. The social evils of capitalism, according to Mill, were the consequence of unbridled individualism and insufficient protection against abuse of property rights. Mill understood fair distribution of property as wage according to contribution to the production process. Mill argued for progressive inheritance taxes in order to reduce inequalities in property income, which in fact concerns the creation of equality of opportunity and the reduction of inequality due to an unequal distribution of initial assets.

Following Legrand [1991] and Coleman [1987, p. 169], equality of opportunity can be explained as follows. Equality of opportunity implies intervention to provide every person with the means that are needed for equal chances of obtaining material and symbolic rewards from productive activity. This is contrary to equality of outcome, which implies redistribution of rewards to provide each person with the same amount. In other words, individuals should have equal choice sets. Choice sets are determined by social and economic barriers, initial resources and talents.<sup>7</sup> For equality of opportunity equal choice sets are required. In order to achieve this it may be that social and economic factors have to be manipulated. A problem is the difference in individual preferences, that can be seen as autonomous, because they can cause different perceptions by individuals of a choice set. Equality in choice sets is not only determined by equality of opportunity, but also by equality of factors of production. Individual choice sets are not only determined by social and economic barriers, but also by initial means and talents, which can contain natural capabilities and means for development of those capabilities.

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<sup>7</sup>Talents concern natural capabilities and resources obtained by inheritance, gifts, family background.

When taking into consideration dynamical aspects of equality of opportunities, an interesting problem appears with the Schumpeterian entrepreneur. In capitalism, the Schumpeterian entrepreneur is someone who applies new combinations of factors of production. He is an innovator and agent of economic change and development. Only a small group of people is endowed with entrepreneurship, pioneers in the field of new technologies, new products and new markets. Furthermore, Schumpeter introduced the concept of the production function that tells us everything that we have to know about the technological aspects of production. Schumpeter considers the creation of a new production function as the introduction of new combinations. He considers the changes caused by innovations to be economic evolution, not economic development [Heertje, 1987, p. 264]. Within capitalism the entrepreneur causes economic change by taking risks connected with innovation. A problem that comes into being regarding equality of opportunity is that the entrepreneur can get rich. Is this justifiable, or should the rewards for his personal entrepreneurial characteristic be shared with the rest of society? The reward for entrepreneurship can be considered to be a property right on a talent. When this property right becomes "public", this can reduce the incentive for innovation. This touches upon the central problem: entrepreneurship is needed for innovation, and the expected rewards stimulate entrepreneurship; however, this can lead to inequalities in opportunities in the future. These inequalities of opportunities can hamper the development of potential entrepreneurs which, for example, due to the lack of their parent's entrepreneurship (or just bad luck or whatever) have less initial opportunities. This is an argument for providing basic education, health care and social security in a society. Entrepreneurs should be able to obtain the rewards for their activities, stimulating technological change, while keeping a base creating opportunities for potential entrepreneurship that can come from any social strata in the future. A remark that has to be made is that entrepreneurship, like all human skills, can be used in constructive and de-constructive ways. A lot depends on the entrepreneur's time-horizon, preferences, beliefs, norms, etc.<sup>8</sup> Thus, an institutional framework should be created that directs entrepreneurship in a constructive direction.<sup>9</sup>

<sup>8</sup> People may get utility from inventing something which brings benefits for themselves and for the whole society, but people may be as well get utility from other people's suffering.

<sup>9</sup> A constructive direction of course remains a normative matter.

## Roemer

Roemer [1982, 1988] considers the property relations under capitalism together with the lack of self-fulfilment within this system as the most important element of unfairness of this system. Roemer argues for a market economy with an egalitarian distribution of factors of production that can be reproduced [Plasmeijer, 1987]. In contrast to Marx, who considers exploitation of labour as the unique source of profit, Roemer [1982] shows with help of the neo-classical equivalence theorem, where it does not matter whether labour hires capital or capital hires labour, that exploitation of capital and labour are isomorphic. According to Roemer, exploitation appears due to an unequal distribution of property rights on factors of production. In this case there is in fact no profit, but rewards for factors of production that depend on preferences and relative scarcity. Income is obtained from property rights on factors of production.

Roemer introduces the concept of socially necessary exploitation. Socially necessary exploitation exists when redistribution of property makes the exploited group worse-off. Roemer distinguishes a static and a dynamic aspect. We speak about socially necessary exploitation in a static sense when, for example, within capitalism we get a more egalitarian distribution of property rights, which has such a negative influence on incentives that the economy produces inside the production possibility curve [Roemer, 1988, p. 145]. We speak about socially necessary exploitation in a dynamical sense when redistribution of property rights would lead to, for example, slower technological advance. A non-egalitarian distribution of property rights brings about development of productive forces. This development does not necessarily improve everybody's situation, but can be essential for reducing natural scarcity. In this case scarcity has to be interpreted as the lack of possibilities to generate income, which hampers the achievement of the ultimate goal – self-fulfilment of man. The moment exploitation becomes socially unnecessary, it should be abolished because it would hamper economic development.

The question remains whether exploitation can be abolished in practice. First of all, it is difficult to establish in practice whether there is socially necessary exploitation. In other words, what level of inequalities of income and production factors are needed for economic development, and when does it become a break on further development, for example due to increasing social tensions and disincentives for the lowest income groups without or with few factors of production to deliver proper work and undertake new economic activities. Furthermore, in Roemer's concept children, pensioners and handicapped people are also exploiters [Spoormans, 1987, p. 43]. With an egalitarian redistribution of property

rights on means of production they would be worse-off. The income of those groups concerns transfer income that has to be financed from income from property rights on factors of production. In terms of Sen, personal characteristics of human beings have as a consequence that exploitation always will be socially necessary to a certain extent. Then the essential question will be what is acceptable use of the residual income that comes into being due to exploitation.

Summarising, according to Roemer exploitation comes into being due to an unequal initial distribution of factors of production. Exploitation is unfair when it is due to an unequal initial distribution of factors of production. Inheritance is, according to Roemer, one of the most important factors causing an unequal initial distribution of factors of production. From an ethical point of view Roemer pleads for high taxes on inheritance, but he poses a question as to whether this would have a negative influence on the efficiency of the economy. Many people, for example, have an incentive to undertake economic activity, in order to leave something behind for their offspring. Such a critique on the right of inheritance and property right relations, as well as the pleading for a market economy also appears in Mill's critique of capitalism.

An interesting question is how Roemer's critique on capitalism can be interpreted within a global framework. The differences in income and property rights on factors of production are very large. For the United States itself, one could argue that the development in increasing income differentials during the last 30 years has contributed to economic growth.<sup>10</sup> However, the increasing inequalities together with a fall in the real income of the poorest part of society may cause social and economic problems in the future and have negative consequences for the environment. On a world scale the differences are so big, that one cannot speak of socially necessary exploitation anymore. The process of globalisation (meaning the internationalisation of markets) should go together with a redistribution of income and factors of production for a more fair and sustainable development.

## Rawls

Rawls reintroduced the contract philosophy in order to create universally valid principles of justice. In order to achieve this, Rawls uses metaphoric criteria like the "original position" and the "veil of ignorance."

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<sup>10</sup>See Castells [1996] for a discussion of the development of income inequality in the United States since the 1970s.

The "original position" can be described as a hypothetical state of original equality in which people, without knowing who they will become, choose between alternative principles that arrange the basic structure for a fair society. This procedure is considered to be reasonable, and the formulated principles to be fair, because the decisions are made from behind a "veil of ignorance" [Sen, 1992, p. 75]. In this case, one does not know whether he/she will be man or women, rich or poor, black or white, born in Nepal or Germany, etc. The main aim of the lack of information about this is to prevent a deviation in the choice of principles due to the influence of factors that are arbitrary from a moral point of view. Choice from behind a "veil of ignorance" is rational choice under uncertainty [Buchanan, 1982, pp. 115–7]. Legrand [1991, pp. 77–8] argues that one cannot speak about moral principles, but self-interest – maximising the worst position that can be achieved from a situation of ignorance. Other factors than utility maximisation for the worst-off can be important for the initial position, like the capability to enter into relationships with other people. Furthermore, implicitly Rawls assumes risk-aversity.

Rawls [1973] uses the concept of primary goods for formulating his principles of fairness. Primary goods, like rights and freedom, opportunities and power, income and wealth, can be distinguished from other goods because they are needed for the realisation of "the most rational long-term life plan" [Rawls, 1973, pp. 92–3]. This approaches the idea of self-fulfilment that also can be found in Mill's and Roemer's work. Rawls considers the basic structure of society as the primary subject of justice. The basic structure of society concerns the whole set of most extensive social, political, legal and economic institutions. The function of the basic structure of a society is to divide the costs and benefits of social co-operation between the members of society. Costs are, among other things, (social) obligations and taxes [Buchanan, 1982, pp. 105]. Another reason for the fact that the basic structure of society is the primary subject of justice, is that the influence of the basic structure on individuals is present when they are born and will remain throughout their lives.

Rawls formulated two principles of justice, which characterise the need for equality of primary social goods:

1. Each person should have an equal right to the most extensive system of equal basic liberties corresponding with an equal system of liberties for all [Rawls, 1973, p. 250].
2. Social and economic inequalities have to be such that both
  - a) are to the advantage of the worst-off, and
  - b) connected to functions and positions that are accessible for all under conditions of fair equality of opportunity [Rawls, 1973, p. 302].

The first principle has priority over the second. The second principle, which requires equality in terms of an index of primary goods, can be seen as a supplement to the first. Inequalities are to be rejected, except when they are to the advantage of everyone. This also concerns the "difference principle" which means that promotion of the interests of the worst-off are preferred. This leads to the maximin principle defined in an index of primary goods. But given the priority of the liberty principle, no trade-off is allowed between basic liberties and economic and social rewards [Sen, 1987, p. 156].

Principle 1 comes first, principle 2b second and principle 2a last in the hierarchy. This implies that only basic liberties can be limited for the sake of increasing other basic liberties [Rawls, 1973, p. 302]. Thus there is no trade-off between liberties and a fair distribution of means. Rawls [Ibid., p. 61] describes the following basic liberties:

- a) freedom to participate in the political process;
- b) freedom of speech;
- c) freedom of consciousness;
- d) personal freedom;
- e) freedom from arbitrary arrest and seizure;
- f) freedom of personal property.

The maximin principle implies nuancing equality of opportunities. Rawls states that inequalities are justified when they are to the advantage of the worst-off. This may lead to a situation where there is no equality of opportunity, like with forms of positive discrimination.

Analysing the equal distribution of basic liberties, the first principle of justice, where one liberty can be extended at the cost of another liberty. This can cause problems, which can be explained by way of the earlier mentioned Schumpeterian entrepreneur. Suppose freedom of enterprise is a basic liberty, this means that this is the case for everyone. However, due to entrepreneurship income inequalities can come into being due to, for example, the risk connected with introducing an innovation. Income inequality can impede freedom of enterprise. Income inequalities influence endowments in such a way that it can be impossible for a group to make use of the freedom of enterprise. When a group does not have the possibility of using the freedom of enterprise, it is not a basic liberty anymore, which can be an argument for abolishing freedom of enterprise. When it is assumed, like Schumpeter does, that entrepreneurship is a talent, the problem of inborn impediments for using basic liberties is touched upon. In other words, personal characteristics influence the ability to use basic liberties, as well as means to freedom.

## Sen's critique and addition to Rawls

Rawls considers a fair distribution of primary social goods as necessary for realising life plans. Sen [1987, 1992] argues that in Rawls's theory the notion of "basic capability equality" is inapt. "Basic capabilities" means that a person is able to carry out some basic things, of which freedom of movement is one of the most important. Also other matters can be considered, like the capability of satisfying someone's need for food, to obtain the means for clothing and housing, the power to participate in social life. According to Sen the urgency of these matters are not completely caught by primary goods. Concentration on "basic capabilities" can be considered as an extension of Rawls' primary goods, which shifts the attention from goods to what goods do with people [Sen, 1987, pp. 160–1].

Goods by themselves do not constitute freedom, but are at most means to freedom [Sen, 1992, pp. 80, 84]. The primary goods approach takes little notion of human diversity. People have different demands depending on their health, life expectancy, climate, temperament, body size, etc. This human diversity causes variation in converting primary goods into real freedom. The variations in sex, age, genetic features, etc. provide people with different power to build up freedom in their life [Sen, 1987, p. 158; 1992, p. 85]. Thus equality of primary goods can lead to serious inequalities of outcome due to human diversity. For example, a handicapped person often needs to spend more money on transport than a non-handicapped person to get to the same places.

Sen considers an important problem with the notion of "basic capabilities" ordering and valuing. A partial ordering can be made based on a general uniformity of personal preferences, that have to be supplemented with certain existing conventions of relative importance, which are culturally dependent [Sen, 1987, p. 161]. Sen [1992, p. 8] argues that his "capability" approach is broader than Mill's equality of opportunity. He argues that equality of opportunity often is defined as the availability of certain means. It can also refer to an equal applicability (or non-applicability) of some specific barriers or constraints. When equality of opportunity is characterised in such a way, it adds little to equality of general liberties due to the already mentioned fundamental human diversity, and the existing differences in means (like income and wealth), the importance of which can differ according to a person. Fundamental human diversity and inequality in means to freedom are not included in the equality of opportunity defined here.

#### 4. The market and sustainable development

“Private sector industry is powerful enough to foster the changes needed to ensure ecological sustainability, but this does require that the agents in this decision process are sufficiently motivated by the combined effects of profit motives, foresight and environmental concerns, institutional stipulations, and requirements of competitive advantage. In general, self-enforcing business conduct enables environmental protection, when sustainable business leads to an element of competitive advantage, both in the short run and in the long run. In short, this is a question of incentive compatibility” [Rao, 2000, p. 298].

When comparing the market with the former socialist planned economies, market-type economies have done a better job with respect to the environment (or, putting it differently, a less worse job). One major argument is that in planned economies there was no properly functioning scarcity indicator (i.e. price) that stimulated the efficient use of resources, which was enhanced by information problems and the planning procedures. Furthermore, the lack of private property rights provided disincentives for finding more efficient production technologies (the benefits would not be obtained by the inventor) and common or public property makes it difficult to point at someone who is responsible for abatement of pollution or preventing environmentally-unsound activities. There was an emphasis on production over the environment, and the undeveloped civil society meant that authorities were rather uninterested in environmental problems.

However, the environmental failure of planned economies does not mean that a market economy is sustainable. Following from the quote above, there must be an institutional framework that stimulates sustainable activities, while the costs of environmental activities should be included in market prices (internalised). Private property gives an incentive to take care of resources and to produce efficiently – e.g. using less inputs in order to increase profits. However, profit motives are often short-term. If someone owns a forest it may be attractive to cut all the wood and sell it, while using the remaining land for agricultural purposes. The profit motive may also lead to saving on costs which are not sustainable – the problems of “industrial agriculture” in the European Union are an example of this.

Thus, an institutional framework should exist that directs human behaviour in a sustainable direction. A feature needed for sustainable development to be explored more deeply here is a more equal distribution of income and sources within countries, as well as a more equal distribution of income and sources between countries.

In the context of EU enlargement, two types of Central- and Eastern European (CEE) countries can be distinguished:

1. Welfare states with high GNP per capita and developed market and democratic institutions that developed incrementally over a long period of time (e.g. Germany, Austria).
2. Countries in a **dual** transition with low/medium GNP per capita and relative radical changes in the economic and political field (CEE countries).

These countries can be put in a global typology of countries according to level of economic development and priorities in the context of sustainable development. Furthermore, when co-operating, besides the differences in institutional structures, these different priorities should be taken into account.

#### Different countries – different priorities towards the environment

Type of Country	Example	Priority
Low income countries	Africa, India, China.	Socio-economic development.
Middle income countries	Central and Eastern Europe, South America.	Economic growth; solving locally specific environmental problems which is problematic due to the lack of money.
High income countries	North America, Western Europe, Scandinavia, Japan, Australia, etc.	Have resources to solve locally specific environmental problems. Interested in global environmental problems.

Source: Platje [1999, p. 5], based on van der Gaast and Platje [1997].

The central question is whether a welfare state with low income inequalities is fit for sustainable development. One dilemma is that income differentiation provides incentives to undertake economic activity. This can lead to an increase in GNP (Gross National Product) per capita, which in turn can lead to an increased well-being of the poor when the “trickle down” effect works properly. Theoretically, Roemer and Rawls would accept such a situation. However, the poorest and the richest people, due to their consumption and production pattern, put the biggest pressure on the environment, which is most visible in a global context. These patterns are rather unsustainable. Furthermore, the “trickle down” effect does not always work – GNP per capita and income inequalities can increase at the same time (e.g. Brazil in the 1970s and 1980s, Poland in the 1990s, USA since the 1960s, and world income distribution and growth since the 1960s). Another problem is that many poor countries face higher income inequalities than rich countries, while rich

countries and the welfare states among them in general have a high level of consumption.

Rao [2000] discusses the relationship between (abject) poverty, wealth and the environment. First of all, environmental deterioration affects the poor. Polluted areas are cheaper, thus rather poor people live there. This phenomenon is very visible in slums of large cities. However, in many cities polluting factories and other environmentally unsound activities lower the price of houses in the surrounding area, making the area more attractive for the poor. Air and water pollution, poor hygiene, poor sanitation and under-nourishment lower the potential for developing human capital. Furthermore, the low level of education, poor health conditions and lowly developed human capital lead to high infant mortality rates, inefficient use of time and low labour productivity.

On the other hand, poverty affects the environment. There is a general tendency that people value direct short-term benefits over indirect and long-term benefits (e.g. water pollution is often considered to be more important than the destruction of the ozone layer). In case of poverty, people's time horizon tends even to be shorter, because they value the present over the future for survival reasons – deforestation in developing countries is an example of this. Another problem is that poverty is connected with high population growth in low developed countries (LDCs), putting larger pressure on environmental resources. Improved health care has led to a lower mortality rates, although there is still a high child mortality rate in many LDCs (20–30% of life born children die before they reach). However, the birth rate is still high due to, among other things, the low opportunity costs of having children (e.g. they often function as “old-age insurance” and no investment takes place in education) and low education, especially of women.

The question remains as to whether this tendency can also be found in rich countries, and whether people in, for example, EU and CEE countries have different time horizons with respect to the environment. In general, EU countries, especially the Scandinavian countries, put more emphasis on the environment, while, as mentioned before, CEE countries are more interested in increasing material well-being and environmental protection is rather a luxury good.<sup>11</sup>

High income countries face low population growth (or even population decline) and have more funds available for the abatement of locally-specific environmental problems. Some middle income countries like Poland also

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<sup>11</sup> This of course remains a generalisation. One only has to think of countries like USA and Japan that haven't ratified the Kyoto protocol by the first half of 2001, and a country like Norway that argues for a higher limit on CO<sub>2</sub> emission for themselves because of the interest of their oil industry.

face low population growth and declining birth rates, but lack funds for abatement of locally-specific problems. Aspirations for EU membership may stimulate environmentally-sound activities, but the costs may be high. High income countries seem to be interested in solving global environmental problems, but according to Rao in general those countries are "net exporters" of global warming – emitting more CO<sub>2</sub> in absolute terms and per capita. Of course increasing production efficiency may reduce environmental problems, but in total the use of sources and sinks may increase due to increased consumption (cars, food, traffic, waste, etc.) and total production.

Based on arguments from theories of justice (Sen, Mill, Roemer, Rawls) and the analysis provided above, it can be argued that sustainable development requires a more equal distribution of income, wealth and sources within and between countries. The problem of feasibility remains. Suppose, for example, that on a global scale a meat consumption of 30 kg per capita per year would be sustainable. When we consume on average 60 kg, do we want to reduce our level of consumption? Or what about the aspirations of many people to have a car?

In order to achieve sustainable development, besides redistribution of income, wealth and sources, a change in mentality and behaviour is needed. Furthermore, there is the need for more education, knowledge, skills, consciousness and innovation, as well as good governance in order to carry out environmentally-sound policies. In theory, the distribution of income, wealth and sources should be so equal that it stimulates sustainable production and consumption, but not so equal that it provides disincentives for innovation and technological development (entrepreneurship). In this respect the current welfare state seems to come the closest to this, but it should be kept in mind that for sustainable development an institutional framework is needed that directs human activity towards sustainable development.

## 5. Concluding remarks

In this paper economic arguments and principles of justice were used to argue for reducing income, wealth and source inequalities within and between countries. A welfare state with a market economy may be the most suitable means for this. More equal access to resources and factors of production, as well as education, health care, etc., improves human capital and provides equal opportunities for self-fulfilment and development of entrepreneurship. Furthermore, a more equal distribution may lead to more sustainable consumption and production patterns. However, inequalities should not become so small that it reduces incentives for entrepreneurship – innovation and technological advance.

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