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Sustainable Development and Globalization

Rozwój zrównoważony a globalizacja

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Abstract

The concept of sustainable development has been formulated at a time when modern humanity gained the technological means to carry out almost any transformation of the world around us, but, at the same time also got lost in the goals that their actions should serve. This is connected with the phenomenon of globalization based on egoistic axiology, the priority of which is the uncompromising pursuit of maximum profit. Fortunately, the other globalization – called *inclusive globalization* – is possible. It is based on eco-humanistic axiology, referring to the common good and coherent with sustainable development concept.

The article presents threats and challenges of the contemporary globalization, looking for the solutions that can make our future sustainable.

Key words: sustainable development, globalization, inclusive globalization, egoistic globalization

Streszczenie

Koncepcja rozwoju zrównoważonego została sformułowana w momencie, gdy współczesny człowiek posiadał środki techniczne umożliwiające niemal dowolne przekształcanie otaczającego świata, ale zarazem zagubił się w celach, którym te działania powinny służyć. Jednym z istotnych czynników jest tu zjawisko globalizacji opartej na aksjologii egoistycznej, której celem jest nieustanne pomnażanie zysków. Ale jest możliwa także inna globalizacja, zwana *globalizacją inkluzjonistyczną*. Jest ona oparta na aksjologii ekohumanistycznej, odwołującej się do wspólnego dobra i zgodnej z koncepcją rozwoju zrównoważonego.

W artykule przedstawiono zagrożenia i wyzwania związane z globalizacją, poszukując rozwiązań, które mogłyby uczynić przyszłość zrównoważoną.

Słowa kluczowe: rozwój zrównoważony, globalizacja, globalizacja inkluzjonistyczna, globalizacja egoistyczna

Introduction

Sustainable development relates to the upholding of rights and the satisfying of needs of both present and future generations (Brundtland 1987). This new vision of development represents interdisciplinary program (Sztumski, 2006; Redclift, 2009; Papużiński, 2013; Piontek, 2000) integrating all human activities (global, regional, local), in which we can distinguish three levels and nine planes: ethical, ecological, social, economic, technical, legal and political (Pawłowski, 2011, 2009) – see table 1.

Wprowadzenie

Rozwój zrównoważony odnosi się do zaspokajania praw i potrzeb obecnych i przyszłych pokoleń (Brundtland, 1987). Ta nowa wizja rozwoju stanowi próbę sformułowania interdyscyplinarnego programu (Sztumski, 2006; Redclift, 2009; Papużiński, 2013, Piontek, 2009) integrującego wszystkie płaszczyzny ludzkiego działania. Można tu wyróżnić trzy poziomy i dziewięć płaszczyzn: etyczną, ekologiczną, społeczną, ekonomiczną, techniczną, prawną i polityczną (Pawłowski, 2011, 2009) – por. tabela 1.

Table 1. Hierarchy of the planes of sustainable development (Author's own work).

Level I		Ethical plane	
Level II	Ecological plane	Social plane	Economic plane
Level III	Technical plane	Legal plane	Political plane

The first level, which is the foundation for the others, is an ethical reflection focused on questions regarding values to be adopted, and reasons for proceeding in one way as opposed to another.

Level two covers ecological, social and economic issues, all treated as equally important.

The third level is an analysis of technical, legal and political issues. It is as important as level II, however it covers more detailed problem areas.

The traditional discussion about sustainable development concentrates on the second level. It would be incomplete, however, if not rooted in ethics (level one). Without level three, on the other hand, actual practical detailed solutions may be excluded. It needs to be pointed out that the planes in question are interpenetrative, which makes it hard to discuss problems solely characteristic for one of them only. Even in the case of fulfilling mankind's nonmaterial needs, we cannot avoid associations with the environment. This results from the biological principles of the functioning of human body, which is in constant need of food and therefore interacts with the environment in this sense at least (Littig, Griesler, 2005), although human beings do not have only material needs.

Such a wide scope of issues – together with the equally wide-ranging changes proposed for the different planes and the strategies already adopted – allows us to formulate the following claim: should sustainable development actually ever be implemented, it will introduce a new order as revolutionary as the breakthroughs in human history that are conventionally termed *Revolutions* (Pawłowski, 2008; 2009; 2011). However there are many obstacles that should be overcome, among which the most important one is globalization.

Globalization in the past

The first historical form of globalization was the emergence of empires conquering other countries and introducing their customs, cultures, and religions into them. Such processes occurred from around 8000 BC to around the year 1500 (Wallerstein, 1999). Illustrations of such events are the empire of Alexander the Great and the Roman Empire.

The next phase of development was the colonial empires. Their emergence resulted not only from the enormous military power of some countries, but also by important geographical discoveries. Particularly Vasco da Gama's discovery of the route to

Tabela 1. Hierarchia płaszczyzn zrównoważonego rozwoju (Opracowanie własne).

Poziom I		Płaszczyzna etyczna	
Poziom II	Płaszczyzna ekologiczna	Płaszczyzna społeczna	Płaszczyzna ekonomiczna
Poziom III	Płaszczyzna techniczna	Płaszczyzna prawna	Płaszczyzna polityczna

Poziom pierwszy, będący podstawą dla pozostałych, stanowi refleksja etyczna odnosząca się do ważnych pytań: jakie wartości należy przyjąć, czy też: dlaczego należy postępować tak, a nie inaczej? Poziom drugi to traktowane równorzędnie kwestie ekologiczne, społeczne i ekonomiczne.

Poziom trzeci wypełnia analiza zagadnień szczegółowych: technicznych, prawnych i politycznych.

Tradycyjna dyskusja wokół rozwoju zrównoważonego koncentruje się na poziomie drugim. Bez zakorzenienia w etyce (poziom pierwszy) będzie ona jednak niepełna. Natomiast bez poziomu trzeciego naszej uwadze mogą umknąć konkretne rozwiązania praktyczne.

Podkreślić należy, że wymienione płaszczyzny, mimo hierarchicznej struktury, przenikają się, przez co często nie sposób wskazać na problemy charakterystyczne tylko dla jednej z nich. Nawet w przypadku zaspokajania niematerialnych potrzeb człowieka, nie unikniemy związku ze środowiskiem. Wynika to z biologicznych zasad funkcjonowania ludzkiego ciała, które potrzebuje pożywienia i choćby w tym wymiarze wchodzi w nieustanne interakcje z otoczeniem (Littig, Griesler, 2005).

Tak szeroki proponowany zakres problematyczny, a także związany z nim równie rozległy horyzont zmian, które w ramach poszczególnych płaszczyzn i konkretnych przyjmowanych strategii są postulowane, pozwalają na sformułowanie następującego postulatu: w przypadku rzeczywistego wprowadzenia w życie, rozwój zrównoważony stanie się rewolucją porównywalną do dotychczas wymienianych w dziejach ludzkości momentów przełomowych, także często określanych jako *rewolucje* (Pawłowski, 2008, 2009, 2011). Na tej drodze istnieje jednak wiele przeszkód, z których najważniejszą wydaje się być zjawisko globalizacji.

Globalizacja w przeszłości

Pierwotną formą globalizacji było powstawanie imperiów podbijających coraz to nowe kraje i wprowadzających tam swoje zwyczaje, kulturę i religię. Zjawiska takie dominowały w okresie od ok. 8000 przed Chrystusem do ok. 1500 r. naszej ery (Wallerstein, 1999). Warto wspomnieć o imperium Aleksandra Macedońskiego, czy o Cesarstwie Rzymskim.

Kolejną fazą rozwoju były imperia kolonialne. Ich powstanie było możliwe nie tylko z uwagi na ogromny potencjał militarny, ale także ze względu

India around Africa (1498), and Columbus' arrival in America (1492). The first great empires were developed by Portugal and Spain. Later came those of France, Netherlands, and England. Throughout the centuries the ownership of colonies has been changing, but, nonetheless, colonialism survived until as late as the mid-20th century.

World War II was an important point in time, which, while in most cases it did not affect the colonies themselves, it did weaken the colonial powers.

Another breakthrough came with the resolution of the UN General Assembly which disapproved of colonialism and granted all peoples the right to independence. The last empire, owned by Portugal, fell as late as the 1970s (although if one regards the USSR as an empire, it ceased to exist even later – in the 1990s).

However contemporary globalization does not depend on the power of individual countries.

Contemporary globalization

The term *globalization* appeared in economic literature in the 1960s and referred to the activity of large international corporations (Micklethwait, Wooldridge, 2000; Bowman et al., 2006; Gawor, 2008). The idea itself arose much earlier. In the 1940s, American corporations often invested abroad thus bypassing trade barriers and capitalizing on the lower costs of production arising from, among other things, lower wages (Mucha-Leszko, 2005).

Today globalization is defined (Gawor, 2008) as *an integrated, world-wide social and economic system related to large corporations, characterized by supra-state (and supra-national) diffusion of capital and the adoption of the free trade principle in the field of economic globalization and the assimilation of cultural models, especially in the mass form (cultural globalization)*.

Globalization may be based on egoistic axiology or eco-humanistic axiology – see the comparison of the two in Table 2. The latter, discussed as *inclusive globalization* (Annan, 1997; Michnowski, 2004) though rooted in the principle of common good and compliant with sustainable development, is not the one which prevails. It is because the world of modern corporations is based on egoistic globalization, the priority of which is the uncompromising pursuit of maximum profit, where morality and ethics do not exist (Weizsäcker et al., 1999).

Globalization applies to all levels of sustainable development.

The economic level is the starting point. This is because globalization is based on major changes related to world trade, or, more broadly, to the flow of capital. This process was defined by Edward Luttwak as *Turbo-capitalism* (Luttwak, 1999; Hull, 2008). It illustrates the rapidity and scale of occurring changes.

na ważne odkrycia geograficzne, a w szczególności stwierdzenie przez Vasco da Gamę możliwości przepłynięcia do Indii wokół Afryki (1498 r.) i odkrycie Ameryki przez Kolumba w 1492 r.

Pierwsze wielkie imperia stworzyły Portugalia i Hiszpania, później także Francja, Holandia oraz Anglia. Na przestrzeni dziejów stan posiadania zmieniał się, ale i tak kolonializm przetrwał aż do połowy XX w.

Istotnym momentem była II wojna światowa, która choć w większości przypadków ominęła kolonie, to jednak osłabiła władające nimi mocarstwa.

Punktem przełomowym była także rezolucja Zgromadzenia Ogólnego ONZ potępiająca kolonializm i przyznająca prawo wszystkim narodom do niezależności. Ostatnie imperium, należące do Portugalii, upadło jednak dopiero w latach 70.

Współczesna globalizacja nie jest już zależna od siły poszczególnych państw.

Globalizacja dzisiaj

Termin *globalizacja* w literaturze ekonomicznej zaistniał w latach 60. XX w. i odnosił się do aktywności dużych korporacji o ponadnarodowym charakterze (Micklethwait, Wooldridge, 2000; Bowman et al., 2006; Gawor, 2008). Zjawisko pojawiło się jednak wcześniej, np. amerykańskie korporacje już w latach 40. XX w. często inwestowały za granicą, omijając w ten sposób bariery handlowe oraz wykorzystując niższe koszty produkcji, związane m.in. z niższymi płacami (Mucha-Leszko, 2005).

Współcześnie (Gawor, 2008) globalizację określa się jako *zintegrowany, światowy system społeczno-gospodarczy, powiązany z wielkimi korporacjami, charakteryzujący się ponadpaństwową (i ponadnarodową) dyfuzją kapitału i przyjęciem zasady wolnego handlu w dziedzinie gospodarki (globalizacja ekonomiczna) oraz upodabnianiem się wzorców kultury, szczególnie w wydaniu masowym (globalizacja kulturowa)*.

Globalizacja może być oparta na aksjologii egoistycznej lub ekohumanistycznej – por. tabela 2. Ta druga, zwana *globalizacją inkluzywną* (Annan, 1997; Michnowski, 2004), oparta jest na zasadzie dobra wspólnego i zgodna ze zrównoważonym rozwojem. Nie jest to jednak droga powszechnie wybierana, współczesne korporacje opowiadają się bowiem za globalizacją egoistyczną. Tu priorytetem jest bezwzględne dążenie do maksymalnego zysku, a moralność i etyka nie istnieją (Weizsäcker et al., 1999).

Globalizacja odnosi się do wszystkich płaszczyzn zrównoważonego rozwoju.

Punktem wyjścia jest płaszczyzna ekonomiczna. Globalizacja bazuje bowiem na głębokich zmianach odnoszących się do światowego handlu, czy szerzej przepływu kapitału. Zjawisko to określa się jako *turbokapitalizm* (Luttwak, 1999; Hull, 2008), obrazujący gwałtowność i skalę zachodzących zmian.

Table 2. Globalization and sustainable development (Piontek, 2003).

Issue	Eco-humanistic inclusive globalization	Egoistic globalization
Position of man	Priority of man over other capital.	Human value depends on their economic usability.
Quality of life	The resultant of economic, social, environmental, and spiritual needs.	Only economic wealth.
Time perspective	Present and future generations.	Only the present generation, or more precisely, that part related to the <i>global elite</i> .
Entity responsible	National state.	Anonymous supranational powers.
Law constitution	Aim: international law should be coherent with sustainable development.	Relativised legal system.
Role of the market	Fair market.	<i>Free</i> market based solely on economic efficiency.
Social divisions	Aim is social balance: equal access to knowledge, innovation, and technology. Emphasis on human dignity.	Clear division into the poor, the rich, and the super rich global elite.
Interpersonal relations	Emphasis on the significance of proper family and social relations for the correct mental development of man.	Subordination to the criterion of economic efficiency, weakened family and social relations.
Model of consumption	Limited consumption model.	Unlimited consumption model.
The problem of unemployment	Maintaining proper proportions between labor-consumption, capital-consumption, and environment-consumption.	Lack of will to solve the problem, it does not concern the <i>global elite</i> .
Environment protection	Inseparable element of the development process.	Variable dependent on the given combination of the <i>free</i> market, competition, and profit rate.

Tabela 2. Globalizacja a rozwój zrównoważony (Piontek, 2003).

Cecha	Ekohumanistyczna globalizacja	Egoistyczna globalizacja
Miejsce człowieka	Nadrzędność człowieka w relacji do pozostałych kapitałów.	Wartość człowieka jest uwarunkowana jego użytecznością ekonomiczną.
Jakość życia	Wypadkowa potrzeb ekonomicznych, społecznych, przyrodniczych, i duchowych.	Tylko dobrobyt ekonomiczny.
Horyzont czasowy	Obecne i przyszłe pokolenia.	Jedynie obecne pokolenie, a ściślej jego część związana z tzw. <i>elitą globalną</i> .
Podmiot odpowiedzialny	Państwo narodowe.	Anonimowe siły ponadnarodowe.
Stanowienie prawa	Celem ustanawianie prawa międzynarodowego dla wprowadzania rozwoju zrównoważonego.	Zrelatywizowany system prawny.
Rola rynku	Rynek uczciwy.	Rynek <i>wolny</i> , oparty jedynie na efektywności ekonomicznej.
Podziały społeczne	Celem jest dążenie do równowagi społecznej: równego dostępu do wiedzy, innowacji, techniki. Podkreślenie znaczenia godności ludzkiej.	Wyraźny podział na biednych, bogatych i super-bogą elitę globalną.
Stosunki międzyludzkie	Podkreślenie znaczenia poprawnych więzów rodzinnych i przyjacielskich dla prawidłowego rozwoju psychicznego człowieka.	Podporządkowanie kryterium użyteczności ekonomicznej, osłabione więzy rodzinne i przyjacielskie.
Model konsumpcji	Ograniczony model konsumpcji.	Nieograniczony model konsumpcji.
Problem bezrobocia	Właściwe kształtowanie proporcji pomiędzy pracochłonnością, kapitałochłonnością a przyrodochłonnością.	Brak woli rozwiązania problemu – nie dotyczy on <i>wszak globalnej elity</i> .
Ochrona środowiska	Integralna składowa procesu rozwoju.	Zmienna zależna od danego układu <i>wolnego</i> rynku, konkurencji i stopy zysku.

The corporations want to earn more and more, so they promote consumerism in order to sell their products.

Consumerism is particularly targeted at young people, or even children. It is enough to say that advertisements targeted at children in the American market are worth US \$ 2 billion a year (Goodwin, 2001). These actions are effective. American 3-year-olds are not yet able to write, but they can correctly pronounce the names of corporations or specific products and ask their parents to buy them (Goodwin, 2001).

A significant trait of global consumerism is also the unification of consumer expectations, e.g. the same fashionable clothes, the same electronic equipment, the same popular culture, the same beverages (cultural globalization).

For instance, one of the most famous global concerns, McDonald's, daily serves over 20 million clients – more than the entire population of Greece, Ireland, or Switzerland. It is more than a coincidence that, for example in Japan, the most popular network of restaurants in terms of the number of clients is none of the local chains, but McDonald's (Barber, 1995).

Consumerism is driven by both production growth and the development of newer and newer versions of products and devices. Thus, corporations support technological progress (the technological plane of sustainable development).

However, the growing production quickens the rate of consumption of the resources necessary for the production processes and is responsible for the general intensification of environmental pressure (the environmental plane).

It is estimated that the literature already contains descriptions of over 10 million substances synthesized by man, and each year about a thousand new ones are introduced on the market. Unfortunately, according to some sources, only a small number of them (e.g. in the USA just 2%) have been comprehensively analyzed with regard to their influence on human health (Backlund, Holmbom, Leppakoski, 1992; Bruyn, 2000). This is because the existing laboratories are not capable of completing more research and the market pressure for new products is immense.

Furthermore, even the positive aspects of technological progress may be wiped out by consumerism. This is true for example in the case of the automotive industry. Cars are getting better and better – more environmentally friendly – but they are also growing in number, so the total amount of pollution emitted is not decreasing and in many areas it is growing.

Another important issue is the acquisition of smaller companies by larger corporations, which results in significant restructuring.

Koncerny chcą coraz więcej zarabiać, promują więc konsumeryzm, aby móc lepiej sprzedawać swoje produkty.

Szczególnym celem są ludzie młodzi, a nawet dzieci. Wystarczy wspomnieć, że na rynku amerykańskim reklamy przeznaczone dla najmłodszych to rynek pochłaniający ponad 2 mld dolarów rocznie (Goodwin, 2001).

Działania te przynoszą efekty. Amerykańskie 3-latki nie potrafią jeszcze pisać, ale prawidłowo wymawiają już nazwy koncernów czy też konkretnych produktów i proszą rodziców o ich nabycie (Goodwin, 2001).

Istotną cechą globalnego konsumeryzmu jest również ujednolicenie oczekiwań konsumentów, np. te same modne ubrania, ten sam sprzęt elektroniczny, ta sama pop-kultura, te same napoje (globalizacja kulturowa). Przykładowo: jeden z najbardziej znanych globalnych koncernów McDonalds codziennie obsługuje ponad 20 mln klientów, a więc więcej niż liczy ludność Grecji, Irlandii i Szwajcarii. Nie jest przypadkiem, że np. w Japonii najbardziej popularną siecią restauracji pod względem ilości klientów nie jest żadna z krajowych sieci, a właśnie McDonalds (Barber, 1995).

Konsumeryzm napędzany jest zarazem wzrostem produkcji i wytwarzaniem coraz to nowszych wersji produktów i urządzeń. Korporacje wspierają więc rozwój techniki (płaszczyzna techniczna rozwoju zrównoważonego).

Rosnąca produkcja oznacza jednak przyspieszenie tempa zużycia surowców niezbędnych dla procesów produkcyjnych i ogólny wzrost presji na środowisko (płaszczyzna ekologiczna). Jak się szacuje, w literaturze opisano już ponad 10 milionów substancji zsyntetyzowanych przez człowieka, a co roku na rynek wprowadza się ok. 1000 nowych. Niestety, tylko niewielka ich część (oceniana przez niektóre źródła np. w przypadku USA na ledwie 2%) została w pełni przebadana odnośnie wpływu na ludzkie zdrowie (Backlund, Holmbom, Leppakoski, 1992; Bruyn, 2000). Dzieje się tak, bowiem istniejące laboratoria nie są w stanie prowadzić więcej badań, a zarazem presja rynku na nowość jest ogromna.

Nawet pozytywne aspekty postępu technicznego w obliczu konsumpcjonizmu mogą ulec zatarciu. Aspekt ten odnosi się m.in. do rynku samochodowego: samochody są coraz lepsze, także wobec środowiska, ale jest ich coraz więcej, przez co ogólny poziom emitowanych zanieczyszczeń nie tylko nie ulega zmniejszeniu, ale w wielu regionach stabilnie się zwiększa.

Innym ważnym zagadnieniem jest przejmowanie przez korporacje mniejszych koncernów, z czym związane jest ich głębokie przekształcanie.

Przykładem może być Pacific Lumber Company, firma zajmująca się wycinaniem sekwoi. Przyjęto w

One example is the Pacific Lumber Company which is involved in the cutting of sequoia trees. It adopted important environmental and social assumptions (Korten, 2007):

- ✓ The level of logging must not exceed the forest's regenerative capacity.
- ✓ The employees not only received remuneration, but were covered by a social program including a pension fund.

When the company was taken over by a larger entity, the logging drastically increased and the social benefits of employees were just as drastically limited (Korten, 2007).

This example shows that the global free market is not capable of solving environmental or social problems.

Moreover, corporations not only shape the operations of their subsidiaries at will, but are also strong enough to effectively influence the existing legal systems.

Another disturbing example is the North American Free Trade Agreement (NAFTA). Chapter 11 of this document allows private investors to change the local law in court proceedings, with respect to a wide range of issues, such as the environmental impact of a given business. Corporations immediately made use of this option and won some of the lawsuits, resulting in millions of dollars-worth of losses to the states involved (Mann, von Moltke, 1999).

Other aspects of globalization are even more dangerous.

First, it concerns the migration of the most skilled and usually best-educated citizens of poorer countries to richer ones. These people contribute with their work to the further development of the North and impoverishment of the South.

Second, large corporations have become supranational (post-national, and sometimes even anti-national), which has undermined the role of traditional states. If solutions and strategies (at the political and legal levels), introduced by a given country or group of countries (even within the EU), happen to be disadvantageous for these corporations, they will transfer this part of their activities to other countries where such operations might be allowed. Moreover, as many economists point out, corporations are also able to block the development of almost any company not yet owned by them (Ikerd, 2005).

A new trend is the involvement of corporations in military operations and restoration activities after natural disasters. In her book *The Shock Doctrine, The Rise of Disaster Capitalism* (2007) Naomi Klein illustrates that such policies may be very lucrative for large companies. The title of the book refers to the military doctrine adopted by the USA in 2003 during the invasion on Iraq. Klein asserts that the aim of the military operation *Shock and Awe* was to induce fear and feelings of danger and

niej ważne założenia ekologiczne i społeczne (Korten, 2007):

- ✓ poziom wycinki nie może przekraczać zdolności regeneracji lasu,
- ✓ pracownicy mieli zapewnione nie tylko wynagrodzenia, ale także program społeczny uwzględniający ubezpieczenia emerytalne.

Gdy firma została wykupiona przez większego gracza, natychmiast drastycznie zwiększono wycinkę i równie drastycznie zmniejszono zabezpieczenia socjalne dla pracowników. Przypadek ten pokazuje, że globalny wolny rynek nie jest w stanie rozwiązać ani problemów środowiskowych, ani społecznych.

Co więcej, koncerny nie tylko dowolnie kształtują działania podległych sobie firm, ale także są na tyle silne, aby realnie wpływać na istniejące systemy prawne. Niepokojącym przykładem może być amerykański układ handlowy NAFTA (North American Free Trade Agreement). Rozdział 11 tego dokumentu daje prywatnym inwestorom instrument pozwalający zmieniać prawo lokalne na drodze sądowej i to w szerokim spektrum tematycznym, odnoszącym się m.in. do wpływu danej działalności gospodarczej na środowisko. Korporacje skorzystały natychmiast z tego prawa i część przeprowadzonych procesów wygrały, co oznaczało milionowe straty dla poszczególnych państw (Mann, von Moltke, 1999).

Najbardziej groźnymi wydają się jednak być inne aspekty globalizacji.

Po pierwsze jest to emigracja najzdolniejszych i zwykle najlepiej wykształconych obywateli krajów biedniejszych do bogatszych. Ludzie ci swoją dalszą pracę przyczyniają się do rozwoju Północy i dodatkowego osłabienia Południa.

Po drugie, duże korporacje przybrały charakter ponadnarodowy (postnarodowy, a ponieważ także antynarodowy), przez co osłabiły rolę, którą do tej pory odgrywały poszczególne państwa. Jeżeli przyjęte w danym kraju, czy grupie krajów (nawet na poziomie UE), rozwiązania i strategie (płaszczyzny polityczna i prawna) są z ich punktu widzenia niekorzystne, tę część aktywności przeniosą na teren innych państw, gdzie takie działania mogą być dopuszczalne. Ponadto korporacje są także w stanie zablokować rozwój niemal każdej firmy, która do nich jeszcze nie należy (Ikerd, 2005).

Nowym zjawiskiem jest rosnące zaangażowanie korporacji w zbrojenia i odbudowę terenów dotkniętych katastrofami naturalnymi. Naomi Klein w książce *Doktryna szoku* (2007) pokazuje, jak bardzo takie działania mogą być opłacalne. Tytuł książki nawiązuje do doktryny militarnej przyjętej przez armię USA w związku z atakiem na Irak. Celem operacji *Szok i przerażenie* było wywołanie strachu, oraz sianie spustoszenia na taką skalę, by przekroczyć zdolność pojmowania zarówno władz, jak i całego społeczeństwa.

to wreak havoc on such a scale as to exceed the ability of people, the authorities, and society as a whole to understand it. Also natural phenomena may induce similar effects (Klein, 2007). According to the author, this induced fear is used to rob the attacked countries of their natural resources (such as oil in the case of Iraq). What's more, the process of subsequent restoration is conducted – in order to maximize profits – only with the participation of companies controlled by the *invaders* and without regard for local people.

The Baghdad Children's Hospital is an example of this mechanism. When Klein visited it in 2004, the facility, built by American developers, failed to meet basic sanitary standards – sewage was draining along corridors and all the toilets were out of order. What is more, although the corporations had received funds for the reconstruction of 142 health centers all over Iraq, only six of them had actually been completed (Klein, 2007).

A similar policy is used in the case of natural disasters, such as Hurricane Katrina, which struck New Orleans in 2005. Klein writes that the money which was meant as support for flood victims was partly used for the liquidation of public schools and their replacement with private ones. There were 123 public schools in New Orleans before Katrina; after the *restoration* the number has shrunk to four (Klein, 2007).

It is thus not surprising to hear voices warning that the strategy of corporations is to subordinate countries and societies to themselves (or, more frankly, to the liberal global market).

Such actions lead to social and political Darwinism (Kozak, 2001) and mark the return of colonialism, but under new *banners*. One should note that in Darwin's original theory each species struggles for survival, but also pursues its own benefits, such as individual skills. The development of skills in the course of evolution has resulted in an enormous diversity of higher forms of life. Therefore, adapting *the struggle for existence* to the principles of economics should not lead to granting the stronger individuals the right to exploit the weaker ones. Darwin described the emergence of diversity, but the large corporations destroy it (Weizsäcker et al., 1999). The modern social Darwinism assumes a specific kind of selection. In view of the shrinking supplies of natural resources, it rejects the principle of *common good* which implies the relief of pressure on the environment, especially on the part of the North which is consuming most resources. The North engages all of its scientific and technological strength, but does this only for its own use, leaving the rest of the world to fend for itself. As it was expressed in the report of the Hammarskjöld Foundation for the United Nations, the rich are floating in a lifeboat surrounded by the poor swimming in the water. Because the boat is already full, taking the poor on board would cause it to sink with all

Podobne efekty niosą ze sobą także katastrofy naturalne (Klein, 2007). Strach jest następnie wykorzystywany do rabunkowej eksploatacji podbitych krajów, w szczególności chodzi tu o surowce naturalne (w przypadku Iraku była to ropa). Późniejsza tzw. *odbudowa* prowadzona jest w taki sposób, aby maksymalizować zyski, a dopuszczane do niej są tylko firmy wskazane przez *najeźdźców*.

Za przykład działania tego mechanizmu można podać szpital dziecięcy w Bagdadzie. Kiedy Klein odwiedziła go w 2004 r. świeżo *odbudowana* placówka nie spełniała minimalnych standardów sanitarnych – ścieki wylewały się na korytarze, a toalety nie działały. Co więcej, chociaż korporacje otrzymały środki finansowe gwarantujące odbudowę 142 ośrodków zdrowia w całym Iraku, w rzeczywistości zrekonstruowano zaledwie 6 z nich (Klein, 2007).

Podobny mechanizm ma zastosowanie w przypadku katastrof naturalnych, takich jak uderzenie huraganu Katrina w Nowy Orlean w 2005 r. Część pieniędzy, które miały pomóc poszkodowanym, wydano na budowę prywatnych szkół. Przed katastrofą w Nowym Orleanie funkcjonowały 123 szkoły publiczne, po *odbudowie* ich liczba uległa zmniejszeniu do zaledwie 4 (Klein, 2007).

Nie dziwią więc głosy sugerujące, że działalność korporacji oparta na podporządkowywaniu sobie poszczególnych państw i społeczeństw (czy szerzej liberalnemu globalnemu rynkowi) prowadzi ku darwinizmowi społeczno-politycznemu (Kozak, 2001) i oznacza powrót do kolonializmu, tyle, że pod nowymi *sztandarami*.

Należy przy tym zauważyć, że w oryginalnej teorii Darwina każdy gatunek walczy wprawdzie o przetrwanie, ale zarazem dąży do własnych korzyści, którymi są np. indywidualne zdolności. Rozwój zdolności w toku ewolucji doprowadził do wykształcenia się ogromnej różnorodności organizmów wyższych. Adaptowanie *walki o byt* do zasad ekonomii nie powinno więc oznaczać przyznania prawa silniejszym do eksploataowania słabszych. Darwin opisał kształtowanie się różnorodności, tymczasem duże korporacje tę różnorodność niszczą (Weizsäcker et al., 1999).

Współczesny socjal-darwinizm zakłada swoisty rodzaj selekcji. W obliczu malejących zasobów surowców odrzuca zasadę *wspólnego dobra*, w imię której należałoby zmniejszyć presję na środowisko, szczególnie ze strony Północy, która w największym stopniu zużywa surowce. Północ wykorzystuje cały swój potencjał naukowy i techniczny, ale jedynie na własne potrzeby, resztę świata pozostawiając bez pomocy. Jak to zostało obrazowo ujęte w raporcie Fundacji Hammarskjölda dla ONZ bogaci znajdują się jakby w łodzi ratunkowej, dookoła której pływają biedni. Ponieważ łódź już jest pełna, zabranie do niej biednych spowodowałoby zatonięcie wszystkich. Niech więc toną biedni (Michnowski, 2007).

passengers. So let the poor drown (Michnowski, 2007).

In the words of Noam Chomsky, within the framework of this specific *socialism for the rich* (Gawor, 2006) the literature indicates that *the 20:80 principle* applies. This means that 20% of mankind should enjoy a high standard of living and have a supply of food, while the remaining 80% should be deprived of these (Martin, Schumann, 1999; Michnowski, 2007). Taking into account the present distribution of goods and the level of resource consumption by the rich, it seems that the *20:80 principle* is already being enforced. However, a new factor has appeared which might significantly change the situation. The *20:80 principle* does not take into account very populous countries, such as China, which recently have been growing rapidly, and whose environmental impacts are just as considerable as that of the North.

Nevertheless, the scientific and technological factors remain in force. It is already possible to use them to shape the environment almost at will. Obviously, this potential is not commonly accessible, because of the rich countries' reluctance to share their achievements (which have economic value, Szkarowski, 2005). These constitute the *internal barriers* the abolition of which was regarded as a *moral imperative* as early as 1977 in the report *Goals for Mankind*, prepared for the Club of Rome (Laszlo, 1977). Thus, Zdzisława Piątek is right in stating that *contemporary globalization deepens the divide between the rich and the poor. It separates instead of uniting* (Piątek, 2006).

This is strengthened by the observed shift in economy connected with economic crises. From 1970s over 400 financial crises (including 145 banking crises) touched the world (Lieteaer et al., 2012). The last one began in 2007. What made this crisis so devastating? Traditional economy was connected with production, now markets are almost purely speculative. In 2010 the volume of worldwide transactions was \$4 trillion per day. However as much as 98% of it was not connected with production, but with financial speculations – money created out of nothing (Lieteaer et al., 2012). This is not sustainable!

Anti- and alter- globalization

Economic aspects are of the primary motivations behind the currently developing globalization-contesting movements. Within this trend, two basic standpoints are distinguished – anti-globalism and alter-globalism. Both movements are supported by environmentalists, human rights advocates, anarchists, and local community advocates, as well as the supporters of strong national states.

Anti-globalism is a *spontaneous movement of protest against globalization, without an institutionalized form, or even uniformity. It is a wide stream of*

W ramach tego – jak to ujął Noam Chomsky – swobodnego *socjalizmu dla bogatych* (Gawor, 2006) w literaturze wskazuje się ponadto na *zasadę 20:80*, która oznacza, że 20% ludzkości ma żyć na wysokim poziomie i *mieć jedzenie*, a 80% ma być tego pozbawione (Martin, Schumann, 1999; Michnowski, 2007). Biorąc pod uwagę obecną dystrybucję dóbr i poziom zużycia surowców przez najbogatszych, wydaje się, że *zasadę 20:80* już teraz próbuje się wcielić w życie. Istnieje jednak nowy czynnik, który może znacząco zmienić sytuację. *Zasada 20:80* nie uwzględnia wyjątkowo ludnych krajów takich jak Chiny czy Indie, ostatnio dynamicznie rozwijających się, których wpływ na środowisko jest równie istotny, jak krajów Północy.

W mocy pozostają ponadto uwarunkowania potencjału naukowego i technicznego. Już teraz dzięki niemu można niemal dowolnie kształtować środowisko. Potencjał ten nie jest jednak powszechnie dostępny, z uwagi na niechęć krajów bogatych do dzielenia się swoimi *zdobyczami* (co jest uwarunkowane ich wartością ekonomiczną, Szkarowski, 2005). Stanowi to *bariery wewnętrzne*, których zniesienie już w 1977 r. w raporcie *Cele ludzkości*, przygotowanym dla Klubu Rzymskiego uznawano za *moralny imperatyw* (Laszlo, 1977).

Słusznie więc zauważa Zdzisława Piątek, że współczesna globalizacja *pogłębia dysproporcję pomiędzy biednymi a bogatymi. Jest więc tym, co dzieli, a nie tym, co łączy* (Piątek, 2006).

Ta dysproporcja ulega zwiększeniu dzięki obserwowanej obecnie przemianie w światowej ekonomii. Od lat 70. byliśmy świadkami ponad 400 kryzysów finansowych, z których 145 odnosiło się do banków (Lieteaer et al., 2012). Ostatni z nich miał miejsce w 2007 r., a jego konsekwencje są wyjątkowo głębokie. Dlaczego? Tradycyjna ekonomia związana jest z produkcją, ale teraz rynki przybrały charakter spekulacyjny. Przykładowo, w 2010 r. wartość zawieranych codziennie transakcji finansowych sięgała 4 trylionów dolarów. Jednakże aż 98% z nich nie było związanych z produkcją, ale ze spekulacjami finansowymi – to fortuny tworzone z niczego (Lieteaer et al., 2012).

Anty- i alter- globalizacja

Aspekty ekonomiczne stanowią jedną z głównych motywacji do rozwoju ruchów kontestujących globalizację. Wyróżnia się tu dwa stanowiska: anty-globalizm i alterglobalizm. W obu przypadkach wśród zwolenników znajdują się m.in. ekolodzy, obrońcy praw człowieka, anarchiści, obrońcy lokalności i zwolennicy silnych państw narodowych. Antyglobalizm to *samorzutny ruch sprzeciwu wobec tendencji globalizacyjnych (...), nie ma charakteru zinstytucjonalizowanego, ani nawet jednorodnego. (...) To szeroka rzeka rozmaitych ruchów społecznych, politycznych i obywatelskich* (Gawor, 2006). Za punkt przełomowy zwolennicy anty-

various social, political, and civic initiatives (Gawor, 2006). According to anti-globalists, the landmark event of the movement was the protest against the World Trade Organization conference in Seattle in 1999. The number of protesters was estimated at between 50,000 and 100,000 (Globalissues.org, 2008). In the period that followed, almost every economic summit was accompanied by such protests, with these sometimes taking a violent course. Supporters of this trend emphasize not only the dangers stemming from globalization changes to the economy and environment, but also the importance of social issues (e.g. structural unemployment). Moreover, they believe that one of the major threats of globalization is a mass culture ousting local cultures, resulting in a homogeneous pop-cultural model, figuratively termed *McDonaldisation*. In view of that, it is not coincidental that one of the major publications about globalization, written by already mentioned Naomi Klein, is entitled *No Logo* (Klein, 2000), which is a protest against popular trademarks owned by large corporations.

Anti-globalism stands up against globalization as such, offering virtually nothing in its place. It is different in the case of alter-globalism. Supporters of this movement notice both the negative and positive impacts of the globalization processes and act strongly against the former. Globalization should serve man and oppose his reduction to an economic indicator. Also, it should not lead to cultural uniformity. In this context, the famous environmental slogan was adopted, *Think globally, act locally*. It is understood as *glocalism* (a combination of two seemingly opposite terms, globalism and localism), which means using globalization processes so as to avoid losing the local color (Gawor, 2006).

With reference to the above, one might ask the question: is sustainable development an alternative to globalization?

Sustainable development as an alternative: inclusive globalization

It is suggested that globalization and sustainable development are two sides of the same coin. According to Duncan French, *when globalization reorganizes the world, sustainable development indicates the threats entailed by this new order and which result from the earlier history of mankind* (French, 2002).

Let us remember that globalization may be based either on the currently prevailing egoistic axiology, or on eco-humanistic (inclusive) axiology, referring to the common good.

Egoistic globalization, in the words of Benedict XVI, *is not a synonym for world order, but just the opposite. Conflicts generated by the pursuit of economic supremacy and ensuring access to the supply of energy, water, and natural resources are*

globalizmu uznają demonstrację przeciwko obradującej w 1999 r. w Seattle Światowej Organizacji Handlu. Liczbę protestujących szacowano się na 50-100 tys. ludzi (Globalissues.org, 2008). W późniejszym okresie niemal każdemu kolejnemu szczytowi ekonomicznemu towarzyszyły takie manifestacje, przybierając nieraz gwałtowny przebieg. Zwolennicy tego nurtu podkreślają nie tylko niebezpieczeństwa wynikające z globalizacyjnych przemian ekonomicznych, ekologicznych, ale także znaczenie kwestii społecznych (np. strukturalnego bezrobocia). Ponadto za jedno z istotnych niebezpieczeństw uznają kulturę masową, wypierającą kultury lokalne, a promującą homogeniczny wzorzec pop-kulturowy, zwany symbolicznie *macdonaldyzacją*. Nie jest przypadkiem, że jedna z najważniejszych książek tego nurtu, autorstwa wspomnianej już Naomi Klein, nosi tytuł *No Logo* (2000), co stanowi sprzeciw wobec znaków towarowych należących do dużych korporacji.

Antyglobalizm występuje przeciwko globalizacji jako takiej, nie proponując jednak praktycznie nic w zamian. Inaczej jest w przypadku alterglobalizmu. Zwolennicy tego ruchu zauważają tak złe, jak i dobre strony procesów globalizacyjnych, występując zdecydowanie przeciwko tym pierwszym. Globalizacja ma bowiem służyć człowiekowi i przeciwstawiać się jego redukowaniu jedynie do wymiaru wskaźników ekonomicznych. Nie musi ona także oznaczać uniformizacji kulturowej. Na tej płaszczyźnie adaptowano hasło: *myśl globalnie, działaj lokalnie*. Jest ono rozumiane jako *glocalizm* (to złożenie dwóch przeciwstawnych pozornie słów: globalizm i lokalizm), a więc takie korzystanie z globalizacji, aby nie zatracić swego lokalnego kolorytu (Gawor, 2006).

W tym kontekście warto zadać pytanie: czy rozwój zrównoważony jest alternatywą dla globalizacji?

Rozwój zrównoważony jako alternatywa: globalizacja inkluzywna

W literaturze można odnaleźć sugestie, że globalizacja i rozwój zrównoważony to dwie strony tego samego medalu. Jak przekonuje Duncan French, *gdy globalizacja porządkuje świat na nowo, rozwój zrównoważony wskazuje na zagrożenia, które ten porządek ze sobą niesie, a które wynikają z dotychczasowych dziejów ludzkości* (French, 2002).

Przypomnijmy, globalizacja może być oparta albo na dominującej obecnie aksjologii egoistycznej, albo ekohumanistycznej (inkluzywnej) – odnoszącej się do *dobra wspólnego*.

Globalizacja egoistyczna, jak powiedział Benedykt XI: *nie jest synonimem światowego porządku – wręcz przeciwnie. Konflikty generowane dążeniem do prymatu gospodarczego oraz zapewnienia sobie dostępu do zasobów energetycznych, wodnych i surowcowych utrudniają wysiłki tych, którzy starają się o świat bardziej sprawiedliwy i solidarny. (...)*

frustrating the efforts of those trying to bring more justice and solidarity to the world. (...) It has become obvious that only by adopting a moderate lifestyle, accompanied by serious endeavors for an equal distribution of wealth, would we be able to achieve fair and sustainable development. In order to do this, we need people who have a great hope and great courage (Benedict XVI, 2008).

This is a continuation of the thought of Pope John Paul II who, in his 1987 encyclical *Sollicitudo rei socialis*, frequently addressed the threats of globalization (particularly with regard to the rich exploiting the poor). We might quote his statement of 2001 when he said that, *Globalization, 'a priori', is neither good or bad. It will be what people make of it* (John Paul II, 2001).

Even now inclusive globalization has been supported in CIA reports. In the 2000 study *Global Trends 2015: A Dialogue About the Future with Non-government Experts*, published at the end of Bill Clinton's presidential term of office, inclusive globalization was compared to the currently prevailing egoistic globalization which was defined as downright destructive. It was acknowledged that it is only beneficial to the rich part of the world's society and thus constitutes a considerable threat to mankind as a whole. These remarks have not been challenged to this day.

Conclusions

Should sustainable development include the growth of the labor market or, maybe, create other activities equal to work in a better way, which also can provide people with basic material living conditions? How can we counteract the overwhelming priority of production efficiency? Is it possible that everyday work could be a motivation to integrate and cooperate, and not to compete? Can this be reconciled with environmental protection?

As prof. Felix Unger, president of the European Academy of Science and Arts, said: *when we read the news, when we observe the frustration of people voting the old political parties, when new parties appear without any program, then you feel a new stream of perception of politics is on the way. Most people cannot identify themselves with the political system, which is aggravated by the whole financial crisis. The Cypriot crisis cannot be solved by taking people their money. The people in Europe are no longer willing to support banks instead of the people. The main problem is to see that all the political managers have departed from the people and follow only their own interest. The system in Brussels is questionable too. In Brussels they are also far away from the people who, in reality, pay with their taxes everything they are doing. This is deconstruction of our democracy on the way. (...) In this dilemma the message and the voice of the new Pope Franciscus gives a new stimulus. We all have to*

Stało się oczywiste, że tylko przyjmując umiarkowany styl życia, któremu towarzyszą poważne starania o równomierną dystrybucję bogactw, można będzie osiągnąć sprawiedliwy i zrównoważony rozwój. Do tego potrzeba ludzi, którzy żyliby wielką nadzieję i mieli ku temu dużo odwagi (Benedykt XVI, 2008).

Jest to kontynuacja myśli Jana Pawła II, który zagrożeniom związanym z globalizacją (szczególnie w kontekście wycisku biednych przez bogatych) w dużej mierze poświęcił encyklikę *Sollicitudo rei socialis* z 1987 r. i wielokrotnie do tego tematu powracał. Warto zacytować wypowiedź z 2001 r., w której papież stwierdził *globalizacja nie jest 'a priori' dobra ani zła. Będzie taka, jaką uczynią ją ludzie*" (Jan Paweł II, 2001).

Już teraz globalizacja inkluzywna została poparta w raportach CIA, co może wydawać się paradoksalne, biorąc pod uwagę opór USA wobec światowych inicjatyw na rzecz ochrony środowiska.

W opublikowanym pod koniec kadencji Billa Clintona w 2000 r. opracowaniu *Global Trends 2015* globalizację inkluzywną zestawiono z dominującą obecnie globalizacją egoistyczną, którą określono jak wręcz szkodliwą. Stwierdzono, że jest ona korzystna jedynie dla bogatych i poprzez to stanowi istotne zagrożenie dla całej ludzkości. Wskazania te nie zostały zakwestionowane do dziś.

Wnioski

Czy składnikiem rozwoju zrównoważonego nie powinien być rozwój rynku pracy, ewentualnie kreowanie innych aktywności równoważnych pracy, zapewniających ludziom podstawowe, materialne warunki do życia? Jak można przeciwdziałać obowiązującemu priorytetowi sprawności produkcji, polegającemu na wytwarzaniu coraz większej ilości dóbr przez coraz mniejszą ilość osób? Czy jest możliwe, aby praca mobilizowała człowieka do integracji i współdziałania, a nie do konkurencji? Czy da się to pogodzić z ochroną przyrody?

Jak powiedział Felix Unger, prezydent Europejskiej Akademii Nauki i Sztuki: *gdy czytamy wiadomości, gdy obserwujemy frustrację ludzi głoszących na te same stare partie polityczne, gdy pojawiają się nowe partie, ale pozbawione jakiegokolwiek programu, wtedy rośnie poczucie, że zmiany są konieczne. Coraz więcej ludzi nie znajduje dla siebie miejsca w ramach obecnego systemu politycznego, dotkniętego kryzysem finansowym. Sytuację na Cyprze nie powinno się rozwiązywać, poprzez zabieranie ludziom pieniędzy. Europejczycy nie chcą już dalej wspierać banków, chcą wspierać ludzi. Problemem jest to, że politycy dbają o samych siebie, a nie o ludzi, którzy oddają na nich głosy. Bruksela nie stanowi tu wyjątku. Także tam nie pamięta się o tych, którzy poprzez płacenie podatków finansują tę instytucję. W ten sposób demokracja ulega rozmontowaniu. (...) W tym kontekście*

serve life not money (...). Life is the highest value and all we have to do is to serve life. I am sure he will teach us many issues that we have forgotten (Unger, 2013).

The same direction was shown in last two reports for the club of Rome, published in 2012.

In a report *Money and Sustainability* it is clearly stated, that *present financial system is a cause of our society's headlong rush to collapse and we will never create sustainability while immersed in the present financial system* (Lietaer et al., 2012).

In the second report, *A Global Forecast for the Next Forty Years*, it was said, that *we need to shift investment flows from what is most profitable to what society needs. Capitalism won't do this – it is made to allocate money to what is profitable, not to what society needs* (Randers, 2012).

We know the problems now it is time for action. The future is at stake and we must remember about important lesson from the past: many previous civilizations have fallen. Arnold Toynbee suggests, that there were two reasons: too much concentration of wealth and elites unwilling to react to changing circumstances until it was too late (Toynbee, 1929, 1960). Jared Diamond (2005) adds to this environmental degradation. All three factors are visible in contemporary globalization trends. Fortunately we know the solution. It is called sustainable development, and for the common good it supports inclusive globalization. Can we introduce it and begin the sustainable development revolution?

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warto odwołać się do słów nowego papieża Franciszka. Wszyscy powinniśmy służyć życiu, a nie mamonię. (...) Życie jest najwyższą wartością, której powinniśmy służyć. Jestem przekonany, że ten papież przywróci nam pamięć o prawdach, które uległy zapomnieniu (Unger, 2013).

Ten sam kierunek wskazują dwa ostatnie raporty Klubu Rzymskiego, opublikowane w 2012 r.

W opracowaniu *Pieniądze i zrównoważoność* stwierdzono, że *obecny system finansowy jest przyczyną obserwowanego pędu ku zagładzie, co więcej, osiągnięcie zrównoważoności bez zmiany tego systemu nie jest możliwe* (Lietaer et al., 2012).

W drugim raporcie *Globalna prognoza na kolejne 40 lat* stwierdzono, że *potrzebujemy przemiany mechanizmów finansowych z tych, które dostarczają największych zysków, na te, które rzeczywiście potrzebne są ludziom. Kapitalizm jest ślepą uliczką – nastawiony jest bowiem na zysk, a nie na ludzi i ich potrzeby* (Randers, 2012).

Zdiagnozowano już przyczyny obecnych problemów, teraz czas na działanie. Stawką jest przyszłość, a podejmując działania musimy pamiętać o lekcji z przeszłości – wiele cywilizacji przed nami upadło. Arnold Toynbee sugeruje, że działo się tak z dwóch przyczyn: zbyt dużej koncentracji dóbr w rękach nielicznych oraz bierności elit, które nie reagowały na zmieniającą się sytuację aż do momentu, gdy nie było już odwrotu (Toynbee, 1929, 1960). Jared Diamond (2005) dodaje do tego zagrożenia wynikające z degradacji środowiska. Wszystkie te trzy zjawiska obserwujemy we współczesnym zglobalizowanym świecie. Na szczęście istnieje rozwiązanie – to konsekwentne wdrażanie rozwoju zrównoważonego, który – dla wspólnego dobra – wspiera globalizację inkluzywną. Czy jednak uda się go w pełni osiągnąć?

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Economic Democracy – Meeting Some Management Challenges: Changing Scenarios in Brazil

Demokracja ekonomiczna – rozwiązywanie problemów z zarządzaniem: przykład Brazylii

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Abstract

Orthodoxy is failing, both in the traditional *statism* and the free-market approaches. Inequality is becoming a key issue world-wide, aggravated by environmental dramas and the financial chaos. The Brazilian approach can be seen as basically pragmatic. It is reducing inequality through simple measures, which are expanding internal consumption, and opening new opportunities for business and jobs. Financial support is not going to banks, but to productive sectors most hit by the international turmoil, and this is maintaining low unemployment. Environmental issues, particularly the destruction of the Amazon forest, are being faced through strong support for the *greening* initiatives, and social infrastructure in cities. However fragile in this international context, this down-to-earth approach brings lessons that can be useful to consult.

Key words: sustainable development, economic democracy, inequity, Brazil

Streszczenie

Ortodoksja przegrywa, zarówno w odniesieniu do tradycyjnego *etatyzmu*, jak i rozwiązań wolnorynkowych. Nierówności stają się fundamentalnym globalnym wyzwaniem, wzmacnianym przez pogarszający się stan środowiska i chaos finansowy. W tym kontekście warto przedstawić pragmatyczne podejście przyjęte w Brazylii. W jego ramach udaje się zmniejszać nierówności przy pomocy prostych rozwiązań przyczyniających się do wzrostu wewnętrznej konsumpcji, ułatwień dla biznesu i na rynku pracy. Wsparcie finansowe nie jest przeznaczane dla banków, ale bezpośrednio dla sektorów produkcji, najbardziej dotkniętych przez kryzys światowy. W ten sposób możliwe jest utrzymanie bezrobocia na niskim poziomie. Zagadnienia środowiskowe, w tym szczególnie wycinanie lasów tropikalnych, rozwiązywane są przez promocję *zielonych* inicjatyw i rozwój społecznej infrastruktury w miastach. Choć nie w każdym kraju te zdroworozsądkowe rozwiązania będą równie dobrze funkcjonować, stanowią jednak przydatną lekcję, którą warto brać pod uwagę.

Słowa kluczowe: rozwój zrównoważony, demokracja ekonomiczna, nierówności, Brazylia

In all sections of society, there is growing agreement that the world is becoming more unequal, and that today's disparities and their likely trajectory are dangerous

The Economist, Special Report on the World Economy, October 13th 2012

The end of simplifications

In our complex society, limiting democracy to casting a vote every few years, and letting the economy loose in the hands of corporate giants, is simply not working. But the overall governance system that is emerging does not obey our ideological simplifica-

tions, such as *either* planning *or* markets. What we are seeing in the really existing world economy, is a mix of public planning, market mechanisms, cross-enterprise coordination systems, decentralized participatory management, and the growing and chaotic set of international pacts through which we try to fill the gap between a global economy and nation-state governance. Probably nobody knows what kind of animal will result as these different regulation mechanisms interact, but the fact is that we are treading new paths. And simplifications are out.

We have called this emerging mix *Economic Democracy*, which may be overly optimistic, but reflects our view that the economy itself must be democratized, if we want the system to work (Dowbor, 2011a). The ETH (Swiss Federal Institute of Technology) study of the global corporate control network has shown that 737 corporations control 80% of the corporate world, out of which 147 control 40%, 75% of which are financial corporations (ETH, 2011). An IMF (International Monetary Fund) publication, *Finance & Development*, brings us a pathetic cover-story title: *Who's in charge?* Creating more democratic overall management systems is the key issue. While the *another world is possible* Porto Alegre motto is stimulating, the problem is that another management is necessary for it to happen.

Is Brazil showing the way? This would certainly be an exaggeration, but quite a few obvious innovations have helped the country to start on the long way to reduce abysmal inequality, generate decent jobs, and not necessarily at the cost of destroying our natural resources. Building more democratic economic management is not easy in a political environment where if economic and social policies are not pro-rich the elites usually denounce betrayal of democracy, and call in the generals, while the multinationals declare the country non-market-friendly. What follows is a short description of the main strategic issues.

We are relying here on a wide range of discussions that have been taking place in the Conselho de Desenvolvimento Econômico e Social (CDES), the economic and social development council linked to the Presidency, during the last few years, reflecting the broad spectrum of participants and also the many documents, proposals and rulings that have been discussed with the most varied sectors of society, in addition to consultations with experts in the main fields of action. There is a strong convergence overall, notwithstanding the great diversity in proposals. We collected here those which seemed to contribute most to a systemic coherent outlook, stressing the main lines. We also sought to avoid the temptation of a text that by being so general and prudent would say very little, as it often happens with official papers. This, fortunately, is not an official paper.

In this second decade of the millennium, Brazil is taking off from a new level. In a most impressive way it withstood the worst economic crisis since 1929 and is pointing toward a course essentially based on common sense and a sustainable view of economic interests, social needs and environmental requirements. The traditional economic standpoint tied to the simplifications of the Washington Consensus, aged suddenly and is no longer capable of meeting the challenges of a modern and complex society that must look for new expressions of economic, social and environmental policies.

Some basic views are gaining ground. For example, that the presence of a strong public sector is not a hindrance but an essential asset, as Brazil's resilience in the face of the financial crisis is showing. Regulation of finance does not imply bureaucratization, it is a safeguard needed against irresponsibility and rampant speculation. To warrant workers better wages and rights does not represent irresponsible and demagogical moves, it represents a straightforward way of generating demand and stimulating the economy. To support the bottom of the pyramid is not charity, it allows for more justice from the ethical point of view, as well as economic common sense since it generates new opportunities at the bottom of the pyramid. Investing public resources in the poorer regions, even with temporary deficit, generates new possibilities for future investments through external economies.

Expanding social policies does not mean giving up a greater slice of the economic pie to less productive sectors, it represents stronger investment in people, and this enhances economic development as Amartya Sen has already shown. To support social movements is not to distribute benefits, but to provide working instruments for organizations that have a much deeper knowledge of their economic, social and cultural environment, and are flexible and efficient in their specific domains. Being effectively rooted in the communities is essential for social projects to work, as so many failed *parachute* programs have shown. Stimulating sound environmental policies does not *retard* progress, since energy alternatives, improved family farming and the like generate more jobs and technological innovations than to simply tap into existing natural resources. Maintaining a solid tax basis is not *to take away from the people* as it has been presented, it is an essential instrument for providing more sustainable development. Overall, this kind of approach is not based on ideological simplifications, but on a pragmatic approach of expanding policies that have shown to work.

Evidence of improvement does not imply underestimating challenges. The international context continues to be unstable, with a good part of the imbalances of the private financial system in developed countries simply transformed into public deficit, without solving the key issue of the bankers' irre-

sponsibility. In Brazil, social improvements during the last decade notwithstanding, the major challenges remain impressive, requiring more comprehensive initiatives. The whole tax system still awaits greater rationality, fairer distribution of the tax burden, and improved efficiency and redistribution in budget allocation. The modernization of government still depends on rescuing the public dimension of the State, too heavily owned by the corporate world, and the country is still waiting for the increasingly urgent political reform. Environmental policies need to be strengthened and assimilated by the cultures of government and corporations as well as consumer behavior. In some ways, the course to steer has become clearer and society, seeing the obvious results, has become more confident. However, these are early stages of a construction demanding constant rethinking of strategies.

A key point to be considered is the rational use of the country's most impressive potentials and their articulation with new environmental challenges. Brazil has the largest reserve of idle agricultural land on the planet, one of the largest reserves of fresh water and a stable climate, this at a time when pressures for food, feed, fiber and fuels are increasing throughout the world. Brazil masters cutting edge technologies in the biofuels area. The country has an enviable energy matrix, based on hydroelectricity, at a time when mastering the transition to a new paradigm in energy and production technologies is becoming the key for building the future.

In the medium term Brazil will host important international events – the Olympics, the World Cup – that attract even more attention on the global scenario. Increased availability of oil with the Pre-Sal fields opens new perspectives. Adding up these and other factors, if the country can avoid the temptation of one more cycle of agro-exports, or the hasty use of the new oil resources, and is able to protect the environment and to continue improving the new social policy, the virtuous circle enjoys good prospects. Much of the future will depend on how Brazil manages the equation of production, employment, income and environment. Brazil has opened new paths, but the past, and particularly the huge inherited inequality, weigh heavily on the present options.

The slow construction of more performing institutions and more democratic ways of decision, the so-called governance issue, is immensely important. Faced with the political influence of large economic groups and a heavy-handed traditional elite, the government has followed a policy of fragile equilibrium, maintaining privileges of the rich, as a political condition for the development of economic and social inclusion of the poor. Some 150 social and productive inclusion programs have been launched, from the widely known *Bolsa Familia* to less discussed but efficient projects like *Territorio*

da Cidadania, *Luz Para Todos*, *Prouni*, *Pronaf* and so on.

These programs just work, and they do so because they are negotiated, ensuring a reasonable basis of political support. Furthermore, they also work, in the case of the major social programs, because the first and second tiers of management, people who actually carry the weight of getting results, are generally people who come from social movements and indeed are familiar with the issues, know what type of partnerships must be organized and are knowledgeable about mobilization for the programs. Social movements play a vital role in these processes, and will grow in the future. With all the difficulties in the various sectors, a culture of negotiation, of agreement, of respect towards the interest of diverse segments has been gradually built, however fragile at the onset of this decade (Dowbor, 2011b).

Sustainable development context

The outlooks formulated in this text meet certain conceptual definitions considered to be part of the basic set of ideas that are taking shape in the country. As such, first of all, we shall differentiate the concept of economic growth, in a narrow standpoint of boosting gross domestic product, and the concept of development which involves sustainable development on the economic, social, environmental and cultural levels. The concept of sustainability used here, refers to environmental and social sustainability, in the classic definition of the Brundtland Report, meeting present needs without jeopardizing those of future generations. The concept of local or regional development does not refer to a choice of a particular unit such as the municipality, but to the complex territorial articulations the programs require, as they ultimately exert their impact on specific geographic spaces. The concept of planning does not refer to any type of authoritarian central planning, but to consensus building procedures concerning structural programs. This tends to encourage government to build a systemic view of development beyond sectorial reductions, and a long term view that reduces discontinuity between cycles of government elections. The concept of governance is used here in the broad meaning of management involving the government itself as well as the set of organized social actors involved in decision making.

Unquestionably, favorable winds are blowing. A climate of trust is blossoming. Here there are neither winners nor losers. The best image is that of a high tide that floats all boats. Beyond detail of proposals for the country's various sectors, this is the standpoint: a Brazil that is developing with broader participation in the results, in a sustainable way and by means of democratically negotiated decisions.

The international context: risks and opportunities

The international financial crisis of 2008 signaled a turning point. Major simplifications concerning the dichotomy between state and market, with their ideological weight, gave way to an attitude of common sense, pragmatism of results, a search for balance. Somehow, to innovate in politics has become legitimate again. Today, this innovative way of thinking is essential. Internationally, the crisis does not disappear. A global GDP of 60 trillion dollars and 600 trillion dollars of global outstanding derivative volumes can only generate chaos (Bank for..., 2011). Speculative private sector deficits were turned into public debt, loss of pensions and unemployment. The cost of saving speculators without penalizing them results in new tensions with those that are being called to pay. New regulation mechanisms are being sought, but not implemented. A stable and sustainable horizon is not taking shape for the planet. For Brazil, the diversification of foreign relations, with emphasis on South-South and Latin American integration, will continue as a priority.

Financially, Brazil today is at a radically different level. With 35 billion dollars in reserves in 2002, the country was at the mercy of speculative attacks. Today, with 350 billion in reserves, creditor and no longer debtor of the IMF – which financially is not essential albeit significant in symbolic terms – commercial diversification and better balance between domestic and foreign markets, the country has become an international benchmark. The way Brazil maneuvered among the pitfalls of the 2008 financial crisis, including multinationals repatriating extensive funds from subsidiaries to save their headquarters, was obvious worldwide as proof that common sense and pragmatism are more profitable than ideological simplifications. This trust generated allows Brazil today to even make demands on incoming capital. Success breeds success.

Commercially, a world population which increases by 80 million *per annum* with expanded consumption, further enhanced by the biofuels options, should sustain the trend of strong demand for commodities. Brazil, with the largest world reserve of idle agricultural land and 12% of world fresh water reserves is bestowed with exceptionally strong assets. However, the issue of international regulation of commodity prices, now more dependent on speculative capital movements than on the balance of supply and demand is bound to come into foreground. As an example, global trade of oil reaches 85 million barrels per day, and daily speculative trading reaches 3,000 million barrels¹. In this re-

spect, Brazil has a stake in promoting a minimum of international regulatory mechanisms.

In geo-economic terms, the trend is towards a shift from the Atlantic basin to the Pacific, with outstanding advances by China and India that represent 40% of world population and other countries, very dynamic today, such as South Korea and Vietnam, or simply as strong as Japan. This poses structural challenges for Brazil. It should be remembered here that while the United States carried out the Atlantic-Pacific railroad connection in 1890, South-America does not even have a decent highway link between the two oceans. The shift will facilitate a more integrated infrastructure in Latin America, as well as a better balance of occupation and use of the territory in Brazil, still heavily Atlantic oriented in demographics and economic activities. For us, the West acquires new importance.

Another key feature of the new international context is the growing presence of environmental challenges on the planet. While the international financial crisis has migrated from the banks to the ministries, the reality of climate change, extinction of life in the oceans by industrial overfishing, the destruction of forests (particularly important in Brazil and Indonesia), soil erosion, widespread pollution of rivers, groundwater and seas are a matter for concern that, regardless of the Copenhagen, Cancun and other meetings, require added emphasis on the environmental and social sustainability in both the public and private sectors. Brazil holds an advantageous position in this matter.

The social situation is becoming more critical. With the speculative surge in the area of grains, world hunger went from 900 million to 1020 million people. Due to starvation and other absurd causes 10 million children die every year. AIDS has already killed 25 million people. The World Bank estimates that 4 billion people in the world have no access to what they call *the benefits of globalization*. These situations are untenable. The social balance of economic policies is becoming more and more of a central issue on the planet and Brazil has shown the feasibility of policies that balance economic and social objectives (Sachs, Lopes and Dowbor, 2010). Politically, while the economy has become largely globalized, multilateral regulation capacity has been dwindling. The balance of power has also been shifting, with a reduction of the power monopoly by the United States and by developed countries in general. The BRICs have started to occupy an international political position, the G-20 begins to open a space for regular negotiation and Brazil, in particular gained an expressive international presence, largely due to the innovative and well-balanced economic, social and environmental mod-

¹ Oil prices (Brent) have varied from 12.72 \$ in 1998 to 97.26 \$ in 2008, with huge differences in between. Attributing this kind of volatility to variations in demand, such as Chinese voracity for energy, misses the point of

the key impact of speculation (www.oilmarketreport.org). Agricultural commodities fare no better. No steady development planning can exist with such volatility in key world prices.

el implemented and that is simply working. An expansion of these policies, whose organizational technology made great strides, should be the hallmark of the coming years and strengthen the international role of the country.

In terms of new international context, Latin American integration is increasingly gaining momentum. In the past this policy was characterized by creating more acronyms than facts, and real integration corresponded basically to links between multinational corporations in the region. Today progress in terms of institutions, financing mechanisms, infrastructure (still fledgling), migration mechanisms, the academia itself, is quite evident. Brazil has a key role to perform because of its specific weight, as well as because of the political innovations developed and of the many things in common in terms of inherited social dramas. Latin America is acquiring an identity².

A final key point stems from technological advances, particularly in the area of information and communication technologies. The role of access to knowledge, lower cost of infrastructure and of individual equipment, spreading of global connectivity, expansion of access to knowledge throughout the planet, emergence of numerous economic activities in the so-called *society of knowledge* – all these changes are taking place at a much faster pace than was expected. Where in the past century major political clashes were over ownership of production means, in the era of the new economy access to knowledge and definition of the new legal framework have become central issues. In Brazil's case, universal access to the knowledge economy presents a new generation of opportunities for productive inclusion and improved quality of life. The challenge is to bridge the gap between technological challenges and domestic educational backwardness.

Overall, on the international scene, Brazil has today a strong role as a key partner, not merely on the basis of its economic strength and cultural wealth but also of practical and common sense proposals in dealing with major social and environmental challenges, as well with the necessary solidarity with struggling countries. The reliability and respect conquered, not only expand the country's leeway, but are intensely reflected as noted in the case of approval of the World Cup and the Olympic Games, in the feeling of self-assurance of the overall population. At this stage, the country really takes off from another level.

A path based on common sense

As the primary strategic issue, Brazil elected to confront inequalities. This strategy in turn strongly centered on mass consumption as an economic engine. At first, this policy faced strong resistance, but multiplying effects were soon perceived in the process. The main challenge faced by Brazil, the economic and social exclusion of almost half its population, came to be seen as an opportunity, and the country found a new horizon in a growing domestic market. The increasing pressure from the bottom of the Brazilian social pyramid for better living conditions, combined with Government determination to encourage change, created a virtuous circle in which the economic, social and environmental aspects found their common ground.

In Brazil, social expenditures have always been presented as costs, a burden on productive sectors. Economic policies have traditionally been based upon the standpoint that greater competitiveness of the enterprise results from cost reduction. Reducing costs by rationalizing use of inputs and by taking advantage of innovation and technology is indeed essential. On the other hand, cost reduction through cheaper labor reduces the consumer market as a whole and tends to have the opposite effect. Shrinking the consumer market reduces the scale of production, and keeps the economy in the so-called *narrow base*, producing little, for a few and at high prices.

It must be recalled, that for an individual enterprise fewer social rights and lower wages do reduce their costs, thereby making it even more competitive in the marketplace. However, this policy adopted throughout the economy reduces mass demand and brings about stagnation in general. In practical terms, what makes sense at the microeconomic level thus becomes an obstacle in broader terms at the macroeconomic level. Redistributive policies applied to the whole economy, such as the improvement of the minimum salary in the last few years, affects all companies, generating a larger markets for all, and reducing unit production costs through economies of scale. This in turn allows the expansion of mass consumption, gradually creating a virtuous circle of growth. If sustained for a longer time, this policy fosters production capacity by stimulating investments, which in turn tends to generate more jobs and increased consumption. Simultaneous expansion of demand and production capacity prompts development without surges of inflationary pressures. The growth spiral becomes sustainable. As a matter of fact, sectors that stagnate in wages and social rights are frequently also the ones that become accommodated in terms of innovation in general.

This understanding seldom becomes accepted by theoretical explanations alone. However, when this policy is applied, and the results can be seen, as in

² An important ECLAC report, *La Hora de la Igualdad*, draws the main line of the new consensus being built. The title, *A Time for Equality*, is very meaningful. Santiago, mayo de 2010. Documento síntese com 58 páginas em português: <http://bit.ly/bqwYAh>. Documento completo en español: <http://bit.ly/bA9yrl>.

Brazil today, many people who were opposed and claimed that favoring the poor was political opportunism, tend to change their mood. In fact, the policy works, and is facilitating everyone's business. Up to a certain point, Brazil has found its course by turning the biggest challenge, poverty and lack of purchasing power that accompanies it, into a vector for expansion of the economy in general. For a long time, it has been said in Brazil that we must make the cake grow bigger, and distribute it later. What we now see, is that distribution is what makes the cake rise.

Beyond distribution, a second line of change concerns the expansion of social policies in general, involving education, health, vocational training, access to culture and the internet, more dignified housing. Here too a traditional outlook is being reversed. The theoretical heritage of neoliberal simplifications is that those who produce goods and services, that is to say the private productive sectors, generate wealth. Payment of taxes on the generated product makes social policies sustainable. Thus the corporation generates wealth, while social policies would represent a cost. Therefore, from this standpoint we should maximize interests of producers, the private sector, and reduce the size of the State, the spender. The real situation is different. When an enterprise hires a 25 year old engineer, this graduated person represents a formidable asset, which has cost years of care, training, access to general knowledge, family sacrifice, use of the most diverse public infrastructure, profiting from the overall technological level generated throughout society. Social policies are not costs but investments in people. And in view of the current progress towards an increasingly knowledge-intensive society, investing in people is what yields the most. In fact, the understanding that production processes of goods and services and social policies are like hand and glove in the development dynamics as a whole, one financing the other, all being at the same time cost and product, points towards a sustainable view of economic dynamics.

A third key element is the environmental policy. The traditional widely disseminated outlook presents requirements of sustainability as limiting growth, an obstacle for investment and employment, resulting in higher entrepreneurial costs. This is simply the case of a mistaken calculation and already widely discussed at international level, around the argument of externality. Carrying out pre-treatment of emissions in the enterprise where the waste is concentrated is much cheaper than to be burdened later by polluted rivers and groundwater, respiratory diseases and loss of quality of life. For the enterprise it actually comes out cheaper to dump waste into the river; however, the cost to society is incomparably higher. Cutting down the Amazon rainforest does indeed create jobs for a while, but can only maintain them with ongoing

senseless destruction. Stepping up investment in sanitation, in turn, creates jobs, reduces healthcare costs and increases systemic productivity. Investing in clean technologies tends to promote sectors that will be more dynamic in the future and improves international competitiveness. To manage our natural resources in a sustainable way, capitalizes the country for future generations, rather than decapitalizing it. Equally important, in the modern global economy a coherent environmental policy generates credibility and respect at domestic and international levels, which in turn opens markets. The truth is that environmental policy has in recent years achieved a different stature and become part of the new economic policy outlined in the country. A fourth aspect of economic policy relates to reconstruction of the country's capability to plan infrastructure. Good infrastructure, by making access to transport, communications, energy, water and sanitation less expensive, generates external economies for all and enhances the territory's systemic productivity. The cost of freight transport in Brazil is prohibitive, since transporting soybeans and other products of a rather low value to weight ratio, over large distances by truck, generates additional costs for all producers. Rescuing railways, shipyards and coastal navigation, stimulating public transportation in cities, ensuring cheap access to telecom services and broadband, enhancing productivity in the distribution and use of water and especially sewage disposal, the strengthening of renewable energy sources – are initiatives that bring about a huge forward thrust for all economic activities.

Planning and the presence of a solid public administration are essential. Government bashing is shortsighted. Infrastructure provides large networks that interlink the territory. In this sense they are one of the main channels for the reduction of regional imbalances in the country. As an example, expansion in the poorest regions is needed to energize and attract new activities. Public policies can support this type of long term investment in regions where immediate profits are not realized. This involves planning capacity and a long term systemic outlook. Brazilian metropolises are coming to a standstill with an excess of individual transportation means and lack of planning. This broader look at the structural needs of the economy is essential for the systemic coherence of infrastructure investments, and should play an essential role in this decade.

Thus, distributive policies rooted in an outlook of social justice and economic rationality, expansion of investment in people by means of focused social policies, gradual assimilation of environmental sustainability in all decision making processes of economic impact, and rational planning of investments in infrastructure that will greatly reduce the Brazilian cost structure by means of external economies – all these trends lead to better quality of life,

improved international competitiveness, and gradually shapes a model that, in an environment of democracy and social peace, is opening new paths.

Having a model that not only makes theoretical sense, but that works and convinces many of the economic and social actors in the country is an important asset. None of these policies can be considered new or original. But the fact that through negotiated governance the country has managed to gradually put them together creates a new reality. It also shows how crucial politics can be.

Macroeconomic policy: pragmatism and flexibility

Sound macroeconomic management is also playing a central role. At this point Brazil is working on a new level. It is a matter of sustainable wage policies, prices, credit, foreign exchange, social security, investment and tax collection. Technically complex and subject to constant pressures, macroeconomic policy in Brazil used to follow a neoliberal path that was presented with complex theoretical arguments, but was basically centered on maintaining privilege, and brought about low growth and deeper inequality, always with a semblance of seriousness and austerity. The wage restraint and high interest rates would thus be justified as a means of protecting people against inflation. This area of the economy suffers from an original sin: very few people understand how it works, and therefore it is not subject to democratic scrutiny. And the inflationary past left an imprint on the collective unconscious.

As seen, the overall policy adopted may be summarized as expansion of the economy by a progressive social and economic inclusion, which increases aggregate demand, generating jobs and investment, leading to a virtuous spiral of development. The key element of macroeconomic policy is the balance of the different variables, in terms of amount and timing. The policy adopted was characterized by great flexibility and responsiveness to changing national and international trends, a good dose of pragmatism and the search for balance between interests involved.

In practical terms, the initial phase from 2003 to 2005 was characterized by orthodox macroeconomic adjustments aiming to reassure economic agents that the rules of the game were stable, financial commitments were being met, inflationary pressures were being restrained. In parallel, instruments for management of social policies were being devised, which have as the scarce resource not money but administrative capacity, which develops more slowly. The tax and social security mini-reforms permitted in turn to stabilize accounts. The high prices of commodities and diversification of trade agreements reduced external vulnerability.

The second phase, from 2006 to 2008, is characterized by articulation of policies related to the dynamics of accelerated growth due to inclusion, laying the foundations of current actions. The unified register of poor families – a huge effort to reach 60 million people with no ID, postal address or bank account – the unification of social programs in the *Bolsa Família (Family Grant)*, the sharp increase in the minimum wage (therefore also an increase in pensions), expanded support to family agriculture (PRONAF), expansion of credit (payroll loans, financing by BNDES and other state banks), the gradual expansion of investments and other measures led to strong consumption at the base of society and strengthening of private sector investments. The outcome was an impressive expansion of formal employment. In other words, the public administration effectively took over its role of promoting development. Greater demand has not sparked inflation, since the idle productive capacity allowed rapid expansion of supply. Expansion of public expenditures was covered by higher revenues derived from economic growth (over 5% in 2008) and expansion of the formal economy, allowing the government to simultaneously meet the debt commitments and expand social policies.

The financial crisis of 2008 submitted this policy to a severe test. The extent of the crisis and international panic generated, caused a stall in domestic credit, disruption of private investment, transfer of resources from Brazilian subsidiaries of foreign groups to save headquarters (35 billion dollars in 2008 alone) and an overall climate of insecurity. Faced by falling State revenues, the orthodox standpoint would be to restrain public expenditure with a stringent fiscal adjustment. The government decided on a set of counter-cyclical actions, responding in a rapid and diversified way to the various emerging imbalances. Expansion of the minimum wage was continued (12 % in 2009) generating a positive expectation in the market; critical sectors were stimulated by tax exonerations and incentives; foreign exchange reserves were used to finance exports (foreign funding had dried up completely); public debt financing was reduced to prioritize support for productive activities; state banks were used to stimulate the economy with a broad spectrum of credit lines (for people and business, not for banks); for the lower middle-class sectors income tax rates were subdivided. Instead of being reduced, social programs were increased, and a large housing program, *Minha Casa Minha Vida (My Home My Life)*, aiming at one million houses, was launched, thereby generating activities and jobs in a capillary mode for the overall economy.

Bleak forecasts at the time did not materialize. This multifaceted macroeconomic pragmatic policy, based on the understanding that a broader domestic market supports all sectors, simply worked. Even big exporters, like the soybeans and meat produc-

ers, found it interesting to be able to compensate the weakness of foreign markets with enhanced domestic consumption. Furthermore, the idea that an active State is needed was endorsed. Today the country continues to face structural challenges, but feels confident in its capacity for macroeconomic management. The private sector feels more secure as to the rules of the game. This decade is indeed starting at a new level.

Regardless of the financial crisis, another vector of economic policy has taken shape and is becoming central, the large infrastructure investments delayed for so long. *The Program of Growth Acceleration, the Productive Development Program*, expansion of investments by Petrobrás, the PAC II and also the *Education Development Plan*, plans for widespread access to broadband, the planning of water use and many others are at the same time stimulating investment and maintaining this active scenario. This facilitates all adjustments and introduces in various sectors a structural, systemic outlook, rebuilding planning capacity and long term strategy definitions. On the other hand, it generates broader pressure on the meager management capacity of the public administration, which had become used to managing privilege rather than promoting development. The country is thus facing new challenges concerning administrative modernization.

If a theoretical outlook should be rescued, it is that macroeconomic balances are dynamic, that it is possible to create demand without excessive inflationary pressure, to increase State initiative without bringing about irresponsible deficit, to find a new balance between domestic and foreign market without exchange dramas, that it is possible to set conditions (presently a 6 % tax) for entry of speculative capital without being declared a *non-market friendly* by the international speculative market and so on. Above all, it is possible to reduce social and regional imbalances without jeopardizing the more affluent sectors and the wealthiest regions, by ensuring that everyone benefits, however the poorer at a faster pace. Common sense works. Just as a high tide floats all the boats, the State may be providential, ensuring that the tide continues favorable.

Results: groundwork for further expansion

Results are now tangible and highly visible. In the words of Nelson Barbosa, a key promoter of these policies, *the facts are screaming*. In round numbers the level of formal employment has increased by 14 million since 2002. The formalization generates more revenue, which finances much of the support policy. The minimum wage has increased in real purchasing power by 53.67 % in the period (DIEESE, 2010), which affects about 26 million people. Increased minimum wages further enhance the negotiating power of workers. Indirectly favored by this increase are retirees, some 18 million people.

The *Bolsa Familia* has reached 12.4 million families, improving the living conditions of around 48 million people. Actually, this means fewer hungry children and certainly less distress in low income families. Between 2003 and 2010, 29 million people crossed the poverty threshold. Pronaf (family agriculture support) resources were increased from 2.5 billion reais in 2002 to 13 billion in 2009, boosting production of about 2 million small farmers. The program *Territórios de Cidadania (Territories of Citizenship)*, is investing some 20 billion reais in the country's most backward regions through integrated support programs. The *Luz para Todos (Light for all)* program is reaching millions of people now with access to basic domestic equipment. *The Prouni*, which already has more than half a million students from poor families in universities, also showed impressive results. They do better than others in university, rebutting the argument of down-leveling.

The argument that distribution is a kind of unsustainable charity simply does not correspond to reality. Only the *Bolsa Familia* is a simple transfer of resources and is relatively a very small portion of the whole. Even so, since it is tied to health and school attendance, it is considered as a social investment. Income at the roots of society leads to immediate consumption of basic consumer goods that improve nutrition, hygiene as well as small family investments that can be verified in each improvement of modest homes, stimulating production of building materials and basic household equipment. The truth is that the multiplier effect of resources is very large when directed to the roots of society. The poor tend to consume local goods, stimulating backward territories. And in terms of quality of life, every dollar available to the poorest families generates an incomparably greater improvement than when it goes to wealthy ones. Social productivity of money falls rapidly as income rises.

The fact is that due to the immense legacy of backwardness, inequality is diminishing in Brazil steadily but still very slowly. The Gini index fell from 0.53 to 0.493. This compares to 0.46 in the United States, 0.33 in Italy and 0.26 in Germany (IPEA, 2010, p. 9). In Brazil all incomes are rising, and faster for the poor than the rich. But, since the starting point is very low for the poor, even a higher percentage here represents small changes in absolute terms. In regional terms, a much faster growth is perceivable in the Northeast and other poorer regions, but here too inequality is falling very slowly⁴.

A central point is that preconceived ideas that effectively fueled opposition against programs aimed at the base of the social ladder are gradually dismantled. Far from *leaning on*, the poor are demonstrat-

⁴ For the basic figures, see Dowbor, 2008.

ing an impressively positive ability to use resources. They are poor not because of lack of initiative or creativity, but for lack of opportunity. And indeed the tendency to *lean on* is democratically manifested at various social levels.

Organizing policies for the poorest sector of the population encounters a major hurdle, not lack of resources, but difficulty to manage an extremely capillary support system, for those who often have no mailing address, SSN, bank account or even a birth certificate. In a way, the State did not exist for this 30 % of the population. To carry out the registers, implement communication channels and mechanisms for managing this segment of the population required a huge administrative effort still underway. Thus, an indirect impact of inclusion policies was the implementation of transmission belts between the State machine, local authorities, social movements and ultimately the families. The organizational learning resulting from the *Bolsa Familia*, expanded PRONAF, management committees of the *Territorios de Cidadania* program, numerous national and regional conferences – have all created more effective forms of interaction between the State and society, a vector of better management practices for the future.

In this slow transition to an economically but also socially fair and environmentally sustainable Brazil, progress is undeniable, but social liabilities inherited from centuries of imbalance are large. The country continues with an obvious dramatic inequality. Deforestation in the Amazon has been reduced from 28,000 to 7,000 square kilometers per year, which is a great victory, but it is still a disaster. The metropolitan outskirts are still explosive and require radically larger supportive policies. Backwardness in the quality of education, access to more decent health, generalization of environmental policies, democratized access to credit are some of the manifold challenges. The country is facing the need to strengthen inclusion policies, as well as the adjustment of the public management capacity and the decision making processes of society in general. The course to be taken is much clearer today, the basic management instruments are becoming structured. The results that have been already achieved and the experience gained open a new agenda with new challenges.

Conclusion

Looking back, and with the *ex-post* wisdom we gain from the financial crisis, it is clearly the time to set aside the western version of the *Little Red Book* curiously called the Washington Consensus, the *Tea Party* and *Davos* flag waving so similar in its spirit to the Versailles dancing parties, and the different *silver bullet* solutions throughout the political spectrum. It is a matter of difficult and patient consensus building around the key issues. Econom-

ic democracy is certainly not around the corner, but as Ignacy Sachs puts it, in the face of the huge social, economic and environmental issues, we are condemned to innovate.

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Land Access and Food Security for Forest Dwellers: An Economic Analysis for India

Dostęp do ziemi i bezpieczeństwo żywieniowe dla mieszkańców obszarów leśnych: przykład Indii

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Abstract

For an economy to grow sustainably, the developmental needs of the poor have to be addressed, alongside concerns for conservation of resources. In spite of the high economic growth experienced in India in recent decades, driven chiefly by growth in the secondary and tertiary sectors, poverty persists amongst tribal communities. Analysis of survey based data reveals the continued significance of access to land and forest resources in impacting livelihoods and food security for forest dwelling communities, comprising mostly of tribals. Access to land and credit emerge as critical for the majority, with substantial dependence on forest products for the poorest among the poor households. The paper adds to the empirical literature on the debate on relevance of small holder agriculture and access to natural resources for poverty alleviation. It also provides an economic context for a recently enacted legislation that seeks to restore tenurial security to forest dwelling tribal communities.

Keywords: Poverty, food security, forests, tribals, land, sustainable development

Streszczenie

Aby ekonomia rozwijała się w sposób zrównoważony, należy zapewnić możliwość spełniania potrzeb rozwojowych przez biednych, a zarazem dbać o ochronę surowców. Mimo wysokiego poziomu rozwoju ekonomicznego, obserwowanego w ciągu ostatnich kilku dekad w Indiach, napędzanego był przez drugo- i trzeciorzędne sektory, bieda nadal stanowi problem dla wielu plemion. Badania pokazują, że dla społeczności zamieszkujących obszary leśne nadal ogromne znaczenie, w aspekcie poziomu życia i bezpieczeństwa żywieniowego, odgrywa dostęp do ziemi i zasobów leśnych. Artykuł podnosi kwestię zasadności funkcjonowania małych gospodarstw rolniczych i dostępu do surowców naturalnych w kontekście walki z ubóstwem. Przeprowadzono także analizę ekonomiczną niedawno uchwalonego prawa, którego celem jest zapewnienie bezpieczeństwa dla społeczności zamieszkujących obszary leśne.

Słowa kluczowe: ubóstwo, bezpieczeństwo żywieniowe, lasy, plemiona, ziemia, zrównoważony rozwój

1. Introduction

Sustainable development requires that ecosystems and the services that they provide are recognised as essential for human well-being and long term social

welfare. In operationalizing the concept, sustainable development becomes an amalgamation of various social, economic and environmental goals. Measures of sustainable development include indicators of vulnerability among populations and their

ability to adapt to environmental changes such as climate change. Poverty alleviation is an important constituent of sustainable development, as it ensures that the essential needs of the current generation of the poor is met; while multiple indicators of poverty which include income, health, education and access to basic amenities, indicate the ability to cope with ecosystem stresses by vulnerable populations. Poverty alleviation becomes an imperative of sustainable development, so that resource conservation can be achieved in the long run.

In South Asia the proportion of the poor living in rural areas has not been declining rapidly enough, despite urbanization and experiences of high economic and even agricultural growth in certain cases (IFAD, 2011). For countries such as India, the failure of per capita GDP figures in representing poverty reduction (or otherwise) among specific sub populations is a matter of concern. A review of the progress on MDGs (UN, 2006) found *clear signs of hope* for meeting these, alongside reasons for serious concern for disparities that were found to continue to exist both between and within countries.

In terms of hunger and malnutrition, India is home to 28% of the world's hungry population, and ranks 67th in the Global Hunger Index among 119 countries (IFPRI, 2010), although it is the world's second fastest growing economy. Data from the National Family Health Survey (2005-06) found 45% children underweight (IIPS and Macro International, 2007), while specific sub groups within the population are found to be worse-off with the proportion of underweight children crossing the 50% mark among tribals (Dasgupta and Thorat, 2009; IFAD, 2011). In view of the persistent concerns with poverty alleviation and food security, the Government of India envisages providing a legal guarantee of protection from hunger and food deprivation to the entire population by enacting a national legislation (NFSA, 2011).

Forest and land eco-systems contribute to human well-being through various provisioning regulating, cultural and life-supporting services which they provide (MEA, 2005). The tribal population is found mostly in the forested regions of the country and the focus of the current paper is on these forest dwellers¹. There are large numbers of such forest dwellers in India the majority of who reside in states with poverty levels well above the national average. Data reveals that tribal communities, particularly in rural areas, are easily amongst the most deprived and disadvantaged, with the majority of such households falling below the poverty line in several states such as Bihar, Chattisgarh, Madhya Pradesh, Jharkhand, Maharashtra and Orissa (GOI, 2007-2012).

¹ The term forest dweller is used throughout this paper to indicate both forest inhabitants and forest adjacent inhabitants. As noted earlier, a substantial portion of forest dwellers are tribals.

These communities have been central to concerns and debates over forest management in recent years. Literature on forestry sector policy initiatives such as Social Forestry and Joint Forest Management indicates that while these have sought to address livelihood concerns, the outcomes have been mixed; while forests may be improving under state-initiated, participatory programmes, forest dwellers livelihoods have not improved uniformly across the country. A range of options have emerged, from viewing forest dwellers as central to any sustainable management programme for forests to the requirement for differentiated policy by type of forest, and further that forest conservation requires that forest dwellers are made less dependent on forests (Agarwal and Yadama, 1997; Gadgil, 2007; Ramnath, 2008; Rangarajan, 2005).

It is argued that over time the rights of tribals over their traditional land holdings have gradually been extinguished leading to insecurity of tenure and fear of eviction (Eighth Report, 2008). Developmental pressures on land availability and the expropriation of common property lands has added to the challenges. Paradoxically, these communities are caught between displacement threats for reasons of forest conservation and displacement which arises from development initiatives such as construction of dams and mining industry. A lack of integrating livelihoods into regeneration programmes for forests has persisted. Little convergence across developmental schemes has been achieved for forest dwellers, due to restrictive legal provisions in forestry laws. As a result communities have been left out of the formal sector employment and processes of economic growth while displacement and migration of tribals has continued, leading to hardships for many, who have added to the numbers of the *informal sector* and the urban poor, lacking in access to formal sources of credit and alternative means of income generation (GOI, 2007-2012).

The inadequacy of the existing institutional structure in addressing the increasing marginalisation of scheduled tribes and other forest dwellers, also led to a demand for reforms culminating in the passing of a legislation (FRA, 2006), that seeks to restore rights to forest dependent households². An equity or rights-based perspective to human wellbeing prioritises principles of justice as more important than

² There are 2 main sets of rights to be gained in the FRA. These can be classified as (a) land rights (private and/or communal) including for past illegal eviction/ displacement and (b) community rights including collective management of common (or community) forest resources; rights over common property resources such as produce of water bodies; grazing rights (for both settled and nomadic communities); rights over *habitat* for Primitive Tribal Groups (PTGs); other customary rights and usufruct ('ownership') rights over Non Timber Forest Products (NTFPs). The latter could be in the nature of either community or individual rights.

utilitarian or instrumental arguments and thereby seeks to support and empower the poor. An important aspect of the Act is in establishing tenurial security for households on land cultivated over generations by these households (more than 75 years)³.

The paper analyses the determinants of poverty in the specific context of poverty alleviation and food security for populations residing in forested areas. It explores what are the determinants for ensuring food security which is a key marker of the presence/lack of vulnerability among the tribal poor⁴. A specific focus is on the entitlement to land, that has been a part of the traditional livelihoods of forest dwellers. The poverty and land access issues are analysed using field data collected through a survey of 22 villages spread over three states in India (nine in West Bengal, six in Andhra Pradesh and seven in Orissa). Villages were sampled purposively from 14 districts to reflect a range of agro climatic conditions. A total of 459 forest households were interviewed in a primary survey.

The paper is organised as follows. Section II details the poverty and natural resource dependency issues for tribal communities in the current context of the Indian economy, focussing on the role of land in poverty alleviation. Section III describes the sampling and methodology of the study. Section IV presents findings on key markers of poverty and forest resource use and Section V discusses the results from an econometric model probing food security and its implications for access to land in a poverty alleviation strategy.

2. Poverty and natural resource dependency among tribal population

This section describes the issues of poverty and natural resource dependency, in particular for land, amongst forest dwelling tribal populations. The empirical analysis focuses on three states: Andhra Pradesh, Orissa and West Bengal. Economic markers in the post reform period reveal economic growth in these states. However, disparities clearly emerge when development indicators in these states are disaggregated by social categories. Studies have also established that nearly 50% of children in Orissa and West Bengal are underweight, with efforts at reducing disparities in health outcomes remaining ineffective for the most part (Pathak and Singh,

2011; Gragnolati et.al, 2005); with reductions being particularly slow for tribal populations whose food consumption is dependent on the vagaries of nature and is characterised by deprivation for the major part of the year (GOI, 2002-2007). Map 1 shows the proportion of population below the poverty line in different states across India while Map 2 provides the proportion of poverty among rural tribal population in these states. It is seen that states with high tribal populations account majorly for the average levels of poverty seen in a state. A high correlation is found between the two.

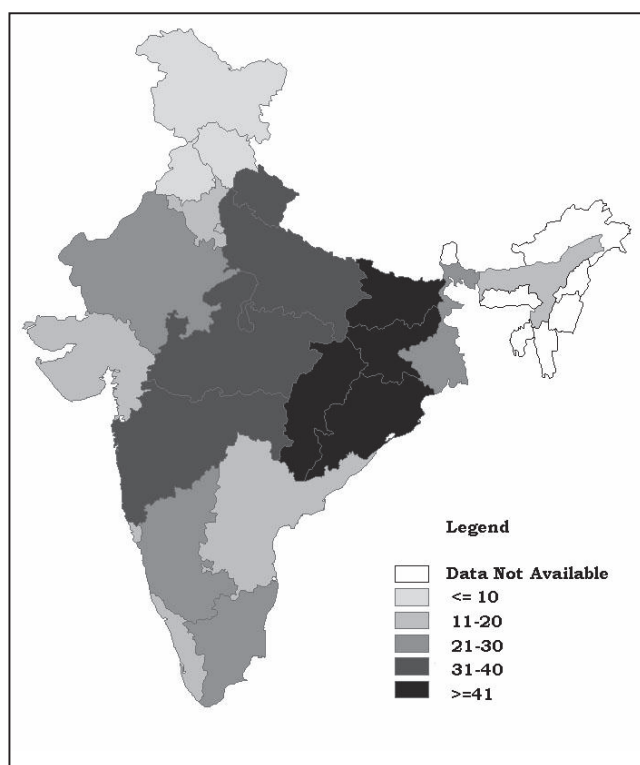


Figure 1. Percentage of Population Below Poverty Line in Indian States (2004-05).

In India, Scheduled Castes (SCs) and Scheduled Tribes (STs) and in some cases the Other Backward Castes (OBCs) are considered as socially disadvantaged groups, which have a higher probability of living under adverse conditions and poverty (Sen, Gang and Myeong-Su, 2002; Nayar, 2007). The 11th Plan document (GOI, 2007-2012) notes that *a major weakness in the economy is that the growth is not perceived as being sufficiently inclusive for many groups, especially SCs, STs, and minorities; the lack of inclusiveness is borne out by data on several dimensions of performance.*

The tribal population of the country was 8.2 percent of the total population, as per the 2001 Census, indicating a growth rate of a little less than 25 percent in absolute numbers over the period 1991-2001. Poverty among STs increased, primarily in rural areas, unlike any other social group during this period. The absolute numbers of poor have in fact increased in several states over the same peri-

³ As always, the success of this enabling legislation will depend on its implementation. As noted elsewhere (Bromley, 2008), formalisation of tenure to be effective in realising its objectives, requires a coherent legal system which can enforce the rights that have been granted.

⁴ Food security is defined as a situation that exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (State of Food Insecurity, 2001).

od, including *Orissa* which is one of the states selected for the study. It is of particular significance to the present study that the 11th Plan also notes that the ST population suffers from multiple deprivations, particularly in terms of inequitable asset ownership such as land. Their health, nutrition and education indicators are much worse than the rest of the population, indicating higher relative deprivation. In rural India, data for 2004-05 clearly reveals a high degree of correspondence between high levels of poverty among SCs, STs and overall poverty. Even states which have low overall poverty levels, such as *Gujarat, Andhra Pradesh and Kerala* also report high poverty levels for STs. Andhra Pradesh is selected for this study. *West Bengal*, another state selected for the study, shows high poverty for SCs as well. In the three states that form the basis for the current analysis, Orissa, West Bengal and Andhra Pradesh, rural poverty among STs is higher than the state average by 30 percent, 14 percent and 19 percent respectively. As Dasgupta (1993) had noted, environmental economics and the economics of destitution are tied to each other in an intricate web. This has become a stark reality in the case of forest dwellers in India, who have increasingly faced relative destitution while the economy has flourished in an aggregative sense.

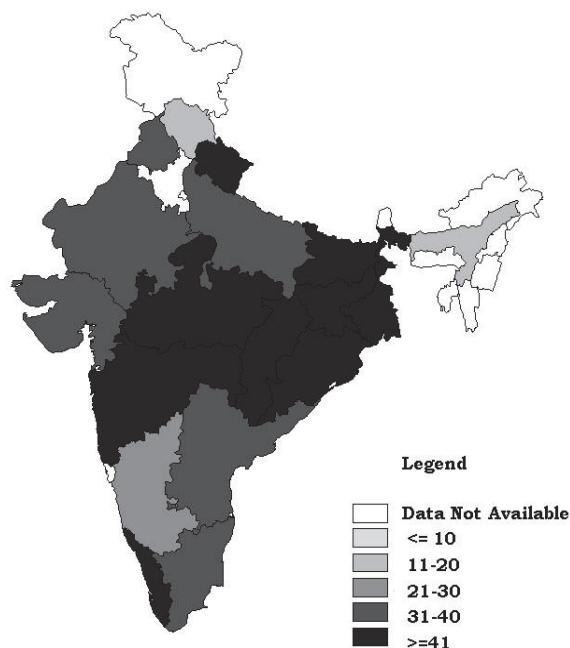


Figure 2. Percentage of Rural Tribal Population Below Poverty Line in Indian States (2004-05).

Land in Poverty Alleviation

It is often argued that rural poverty is exacerbated by highly unequal distribution of land and inequitable access to water and other agricultural inputs. Empirically the relationship between tenurial security and enhanced agricultural productivity is not a

settled one (Bromley, 2008; Feder and Onchan, 1987; World Development Report, 2006). However, in the context of poverty alleviation the question is whether access to land at the level of small holder or subsistence farming can make a difference? The question gathers relevance in the current context of high economic growth alongside the persistence of frustratingly high levels of poverty in rural areas with regard to specific communities.

At the macro level, the poverty reduction effects of agricultural growth in India have been established (Ravallion and Datt, 1996; Rao, 2005). However, a certain amount of skepticism is often expressed with respect to the relevance and sustainability of small holder farming in rural livelihoods, particularly in view of the growing importance of the non-farm sector. It can be argued that the diversification of rural portfolios arises as much from market based opportunities as from adverse circumstances, the withdrawal of the state from supportive agricultural programs and a lack of options for sustaining oneself (Eriksen and Silva, 2009; Mukhopadhyay, 2009).

As researchers have noted, poverty reduction in urban areas proceeds more slowly than in rural areas (Ravallion et al., 2007) hence rural-urban migration or urbanization by itself cannot offer a panacea either under the current circumstances. Recent developments that have occurred with regard to improvements in communications, micro-credit institutions and the availability of small scale farm technology may instead have more potential to contribute to the livelihoods of forest dwellers, if their access to land improves (Biggs et al., 2011; WDR, 2008).

While small holder farming does face multiple challenges, studies have noted the continuing relevance of access to land and agriculture in reducing vulnerability and food insecurity by virtue of important resilience factors associated with small holder agriculture, and its relevance for pro-poor growth (IFAD, 2011; Osbahr et al, 2010). Further, it is apprehended that climatic change impacts can lead to the loss of forest resources, adversely affecting forest-dependent people who live in extreme poverty, such as through reduced NTFP availability (IPCC, 2007). The importance of access to arable land and specific institutional interventions in arresting immiserization elsewhere has also been studied (Bromley, 2005).

Theory on common property resources (CPRs) has been a major basis for understanding livelihoods and income generation for forest dwellers and rural spaces. Theory on natural resource management in developing economies has been intricately linked to the development of theory on the commons (Baland and Plateau, 1996, 2003; Dasgupta, 1993; Ostrom, 1990, 2001, 2005). In the *de jure* sense, today, forestlands in India are largely owned by the government. However, in the *de facto* sense, various

access and use rights have existed and cultivation is an important part of the traditional pattern of livelihoods of many forest dwelling communities encompassing a range of private and/or communal arrangements for cultivation (Chopra and Dasgupta, 2008).

Concerns of efficiency in resource management, including co-operation, distribution, enforcement and long run sustainability have been central to this literature. The tradition has been one of focussing on property rights in the discourse on economic approaches for efficiency in managing forestry and land based institutions; this, in turn, leads to an understanding of the evolution of institutions on the basis of the rules that promote the development of institutions. There have been substantial theoretical developments over the last three decades with the use of game theory by economists and political scientists, demonstrating that co-operative outcomes can be sustained through socially constructed incentives. A rationale can be created for the argument that granting tenurial rights for cultivation of land to forest dwellers can be a sustainable option to alleviate poverty without leading to adverse environmental and ecological outcomes.

3. Sampling and Methods

The key research question raised here is whether access to natural resource, such as land, remains important for ensuring food security and poverty alleviation for marginal and small cultivators belonging to specific community of tribals in a high growth economy. Empirical evidence on this was gathered through a survey of selected households in 22 villages spread over three states.

Sampling

The target population for this study is drawn from forest dwellers residing in different regions of the forested parts of the three states. The sampling is done at three levels: regions with tribal presence in forested areas, hamlets/villages and households. As mentioned earlier, the three states selected for the study are West Bengal, Orissa and AP.

Regions: For each state, regional level agro-climatic criteria are used to stratify the sample. This criterion embodies in itself variations in type of forest cover, the nature of resource dependency, and the administrative basis for historically granting rights to forest dwellers. The regions cover hills and plateaus, plains, and coastal areas. Subsequently, study sites were selected through purposive sampling, to ensure representation of the scenarios for forest dependency, including those where rights of use by forest dwellers may have changed over time. A representative sample of such scenarios for instance, includes forests which have become parts of national parks and sanctuaries, protected forests and forests where there has been displacement of dwell-

ers due to developmental projects such as hydel power and highway construction.

Village Cluster / Hamlet level Sampling: Hamlets at each of the study sites were identified subsequently and a few were selected using random sampling method. The target was to ensure a minimum of at least one hamlet covering the forest dependency and use criteria in the selected sites.

Household Sampling: Having selected hamlets for the research, key informant interviews were used to develop a subjective wealth ranking exercise on the basis of which all the households were stratified. The selection of individual households was done through proportionate random sampling. Table 1 presents details of the selected sample for the study.

Table 1. Selected Districts, Number of Villages and Households in the Sample.

State	Districts	Villages	Households
West Bengal	West Midnapore, Jalpaiguri, Darjeeling, Bankura, Purulia	9	176
Orissa	Deogarh, Nuapada, Bargarh, Sambalpur	7	144
Andhra Pradesh	Adilabad, Visakha, West Godavari, East Godavari, Kurnool	6	139

Methodology

Data collection took place over a period of six months in the three states. The quantitative data was gathered at both the household and the village level by administering two interview schedules. The village schedule was for key informant interviews while the household one was administered to all the households selected in the sample for the study.

The data has been analysed at two levels. At first, data was analysed using simple analytics and the reported information. Subsequently, an applied econometric technique was used to gain further insights on whether and how improving access to land impacts food security. The model analyses the determinants of food security amongst forest dwellers.

Econometric Model: A food security function is estimated using the Heckman selection technique, fitting a regression model with selection by using full information maximum likelihood estimation. This technique helps us overcome the problem of not being able to observe food security (from land cultivated) for those who do not cultivate land in the survey period in the sample. The model is based on the logic that certain factors determine whether a household cultivates land, perhaps a mix of factors within the household's choice set and those which are given to the household. For instance, the household may consider that the returns to being in alternative occupation are higher than the returns from

cultivation. Thus, the decision to cultivate is not a random one, and it would be incorrect to use the Ordinary Least Squares method. Food security is observable only for those who are actually in cultivation. For the others, this variable is not observable, although there are underlying decision-making processes based on the returns from cultivation. Meaningful solutions to such models can be found if there are some variables that affect the chances for observation (of being a cultivator household) but not the final outcome (of having food security or the lack of it). Alternatively put, the extent of food security is observed only for those for whom the production of food at home exceeds the alternative return from other occupation. In econometric terms, this would mean that the variable, months of food security from own production, is truncated.

The model is formulated in terms of two equations: a selection equation – a probit estimation (takes a value of 1 if a household is a cultivator household, 0 otherwise) to explain the decision of whether to go in for own cultivation or not, and a regression equation to explain the months of food security that are obtained, observable only for those for whom the selection equation takes a value of 1.

Model: Selection equation: $z_i^* = w_i \gamma + u_i$; $z_i = 1$ if $z_i^* > 0$ and 0 otherwise

Regression model: $y_i = x_i \beta + \varepsilon_i$; observed only if $z_i = 1$

$(u_i, \varepsilon_i) \sim$ bivariate normal $[0, 0, 1, \sigma_\varepsilon, \rho]$ where ρ is the correlation between ε_i and u_i ⁵.

4. Key Insights from Data Analysis

The primary survey conducted among the households in the selected villages provides data on several socio-economic variables affecting their access to a sustainable livelihood and the ability to cope with risks associated with it. The options available to households for making a living, and, the ability of households in coping with the risks that they face while making a living are important factors determining vulnerability to poverty. Some preliminary insights on key variables that serve as markers for assessing vulnerability to poverty among the sampled households are presented here.

Village Characteristics

The size of the villages is typically small for India, with most villages having less than 100 households. While in Andhra and Orissa, tribal households dominate, in West Bengal there are some lower caste households included as well. A subjective

wealth ranking method was developed for each village in the dataset. Although Andhra Pradesh has the highest *per capita* net state domestic product, in the selected tribal study villages, the proportion of very poor households turns out to be the highest; higher than Orissa and West Bengal.

These villages have poor access to infrastructure in general although slight variations are seen in the three states. In terms of a basic access variable, 20 percent of the selected villages in two states do not have access to an all-weather / metalled road, and in West Bengal 45 % do not have such access. In terms of another basic infrastructure variable, primary schools are also not available in all the villages. It is prudent to remember that poor access to infrastructure has implications for the ability to sustain livelihoods and in building capacity to handle threats to livelihoods in terms of human capital investment and access to alternative sources of livelihood. It is noted that 50 percent of the population is illiterate while another 25 percent is educated only till the primary schooling level.

Income Poverty

It is found that 45 percent of the households have *per capita* income (and *per capita* expenditure) below 7.95 U.S. \$ per month. This corresponds to the cut-offs (INR 356) defined for a poverty line for rural areas as per current norms of the Planning Commission, Government of India. Application of more recent recommendations (Saxena Committee Report July, 2009) implies that approximately 75 percent of the households are poor, with monthly *per capita* income levels below 15.64 US \$ (INR, 700). This is an indicator of the stark levels of poverty prevalent amongst this section of the population. Alternatively, considering food security as an indicator of vulnerability, 25 percent households have food security for just 4.5 months, 50 percent for 7.5 months and the average across the entire sample in the three states is about seven months in the year.

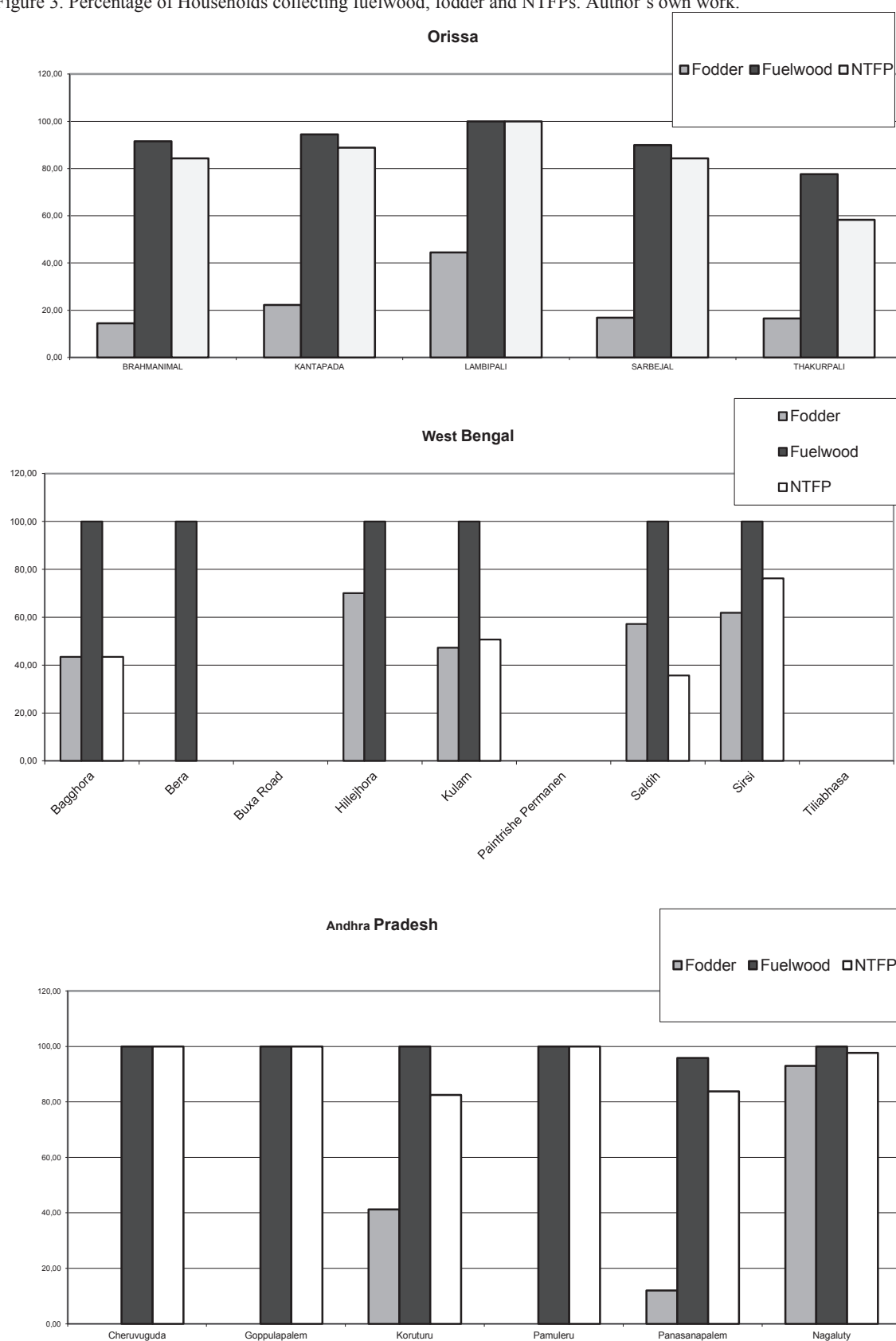
Land, Forests and Access to Credit

Land cultivated

There has been considerable debate over the actual amount of land that is cultivated, often without legal title. In all 262 households out of the total sample of 459 households provided data on the amount of land occupied individually without title. 75 percent households reported having cultivated 3 acres or less, of which 25 percent of the households reported cultivation on a mere 0.6 acres or less. The overall average for the sample is 2.12 acres. Thus, these households are essentially marginal and small cultivators. The relationship between growth and experiences with poverty linked to land access in other countries may it seems have some relevance for India as well.

⁵ It follows that standard regression techniques would yield biased estimates when $\rho \neq 0$. Heckman provides consistent, asymptotically efficient estimates for all the parameters in such a model. In actual estimation, a likelihood ratio test of the independence of these equations (testing for $\rho = 0$) with the corresponding chi-squared statistic is done.

Figure 3. Percentage of Households collecting fuelwood, fodder and NTFPs. Author's own work.



Forest based livelihood

Many studies have established that forest ecosystems provide a host of provisioning services including fuelwood, fodder and NTFPs for communities dependent on them in India⁶. 75 percent of the households in the sample earned cash from forest products, which however constituted only 25 percent or less of the household monthly income. The relevance of the forests in supporting livelihoods in terms of fuelwood (in the absence of other forms of energy for cooking, heating and lighting), fodder collection and grazing for livestock and collection of NTFP for self-consumption is quite substantial. In terms of occupational profiles, while only 0.10 % household heads report collection activity from forests to be their primary occupation, for another 0.11 % households, collections constitute the main secondary occupation for adult earning members. Considering direct collections from forests, the proportion of households engaging in fuelwood collection is expectedly high across all the three states, while the proportion of households collecting NTFPs is much higher in Andhra, followed by Orissa and relatively much less in West Bengal (figure 3).

Village Access

A village facilities score was attempted using principal component analysis. This variable sought to capture the *access* aspect of households by taking into account the facilities available to a village. The five facilities that were considered include availability of an all weather road, bus stop, primary health centre, primary school and public distribution system (PDS) outlet in the village. A village got a score of one for each facility that it had and 0 for those which it did not. Subsequently a principal components analysis was done and a score was thereby generated, as a proxy for capturing the access effect. An overall low score (0.5 and below) for all three states is indicative of the fact that for most villages the reach of developmental programmes and access to facilities is limited. However, the availability of an all weather road is positively correlated (5% level of significance) with the number of households collecting NTFPs, indicating the importance of income generation from collections where access to neighbouring markets may be available.

Access to Credit

There is a significant and positive relationship between (a) borrowings from banks or self-help groups (as against private money lenders) and the income level of the household and (b) total amount of land cultivated and the amount of loan obtained. There is also a significant positive correlation be-

tween the loan amount and the months of food security that a household is able to enjoy. However, the correlation between amount of land cultivated and food security is lower, although significant. Formal sources of borrowing are linked to land holdings and incomes, while private lenders meet the credit needs of the more disadvantaged in terms of assets. There also emerges a similarity with the argument being made at the national level for Indian agriculture, that credit is a major constraining factor for growth in agricultural productivity and incomes.

Table 2. Summary Statistics for Variables used in Model Estimation. Author's own work.

Variable	Number of Observations	Mean Value
Age of head (years)	459	44.54
Agricultural land cultivated (acres)	347	3.04
Food security (number of months)	404	7.43
Total borrowings (INR)	246	5362.44
Share of forest based income in monthly household income (%)	250	17.14
Education (0=illiterate, 1=literate, 2=primary, 3= higher)	459	0.92
Primary occupation (0=cultivation, 1=labour, 2=collection, 3=other)	459	0.86
Monthly per capita expenditure (INR)	433	403.09
Inverse dependency ratio (number of : earners/dependents)	390	1.35
Per capita monthly income (INR)	432	612.77

5. Inferences on Food Security: Results and Discussion

The dependent variable in the food security estimation is the number of months of food security that a household reports from its own cultivation. For the selection (or cultivation) equation the explanatory variables used are: age of head of household, education of head of household⁷, *per capita* monthly income, share of forest based income in total household income. For the regression equation (or food security) the explanatory variables used are amount of borrowings, land cultivated, whether head of household is literate, and the inverse of the

⁶ There is a large body of literature on the contribution of forests to livelihoods. This is not reported here due to space constraints.

⁷ The educational attainment of the head of the household is converted into a categorical variable for ease of estimation and interpretation. On average, the heads of household in the sample are not even literate, thereby belonging to one of the most vulnerable groups in society as per this indicator.

dependency ratio⁸. Table 2 presents some summary statistics on the variables used in the estimation.

Table 3 presents the results obtained from the estimation of the Heckman selection model. The results indicate that food security improves if: the access to credit is higher; the extent of land cultivated is higher; the level of literacy is greater; and if household dependency ratio is lower. Also, a household is more likely to be primarily a cultivator household if the age of the head of the household is higher; the level of education (below primary) is lower; the share of forest based income in total income is higher; and the per capita income is lower.

Table 3. Results from Heckman Selection Model for Determinants of Food Security. Author's own work.

Wald Chi2(4) = 5.75 ; Prob > chi2	0.00
LR Test of Independent Equations (rejects null hypothesis rho=0) ; Chi2(1)=18.91 Prob>Chi2	0.00
Regression model dependent variable:	Coefficient Values
Number of Months of Food Security	
Independent Variables:	
Total Debt	0.000023
Educational level (dummy for illiteracy)	-1.17
Inverse dependency ratio	0.58
Land Cultivated	0.244
Selection Equation:	
Educational level (dummy for primary and below)	0.42
Share of forest based income	0.014
Monthly per capita income	-0.002
Age of Head	0.013
Andhra Pradesh state dummy	significant
Orissa state dummy	insignificant

Note: Unless otherwise mentioned, co-efficient values are significant at 95 percent level of confidence.

While these results are intuitively appealing as they confirm to expectations, it is worthwhile to dwell on a few inferences that can be drawn from these results in the specific context of the study. The results, on which households are likely to be cultivator households in our specific context, are clearly vulnerability markers such as illiteracy and low *per capita* income. Further, an alternative formulation, replacing share of forest based income instead of the inverse of the dependency ratio in the food security equation produces a negative, significant relationship although the debt variable becomes weaker. The reason being that there is a significant negative correlation between the proportions of

forest based income and the amount of borrowings by a household. Food security, therefore, is likely to be lower among those who depend more on forest based collections for cash income. This, despite the fact, that there is a higher probability of such households being cultivator-households. The reasoning being that while the amount of land available is critical, the amount of credit that the household has access to is important for determining the food security position for the household⁹.

Access to land and access to credit emerge as key determinants in improving the poverty situation in forest dweller households. The poorest among these households are likely to have lower access to credit and a higher share of forest dependency in meeting their livelihood needs. The extent of dependency on forests is mediated by the amount of land available and the access to credit, for achieving food security. Other developmental variables do not play a significant role.

Conclusion

It is obvious that tackling poverty remains a huge challenge for the economy with regard to tribal populations, quite irrespective of the economic growth experienced at the aggregative level in the recent past. High levels of poverty (45 to 75 % households), forest dependency (75 % households), lack of food security (over 5 months annually) and lack of access to infrastructure and basic facilities such as schooling and outlets for public distribution of foodgrains persists amongst these households. Results from the data analysis indicate that access to land, access to forest resources and access to credit are important in determining food security for forest dwellers. In terms of direct provisioning, fodder, fuelwood and collections of NTFPs continue to play a significant role in income generation and household consumption, particularly for the poorest households amongst the sampled ones. While the extent of land cultivated is relatively minor at the individual household level, it has a positive relationship with ensuring household level food security. It is also interesting to note the existence of an inverse relationship between forest dependency and access to land and credit.

Food security is a primary marker for policy makers seeking to address poverty alleviation. Institutional reform that aims at providing land for cultivation and tenurial security for small holder cultivation thus continues to have significant relevance for achieving poverty alleviation. Access to land and credit for cultivation continue to be primary determinants of food security for these communities where the processes of macro-economic growth

⁸ Certain other variables found to be important in other studies could not be used meaningfully in the regression due to econometric problems such as highly significant correlations across variables. Social category of the household (whether SC/ST) for instance had very little variation in the dataset.

⁹ Note that even if credit is used for non-agricultural purposes, at the household level it could play a role in determining the amount of self-consumption that a household can opt for.

have not as yet demonstrated discernible impacts on poverty alleviation.

Thus, there seems to be multiple strategies that can be advocated. On one hand, institutional reform can aim to secure individual and community rights to access and utilization of forest ecosystem services, help in consolidating incomes and consumption of forest based products, lead the way for revamping of NTFP regulation, and protect against displacement and disruption of livelihoods due to activities such as mining. On the other hand, policies that secure access to land and credit can stop further immiserisation and food security in particular. The sustainability of the process will no doubt depend upon the extent to which the communities are able to increasingly merge with the formal sector, with the help of improved economic positions and access to education or skill development. Sustainable development is thus best served when poverty alleviation is addressed alongside conservation of precious forest resources.

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Towards the Sustainability of Urban Development

O zrównoważony rozwój miast

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Abstract

The paper concerns the social ecology of the city. It shows the different types of threats which metropolitan environment creates for citizens: lifestyle, social dissonance, security, management, enslavement, architectural weariness, identity, aesthetics, artificiality, self-government and democracy. Modern cities having certain advantages are also the source of evil. Stopping their further development is impossible, but one must strive to transform them into cities which are really for people. This is a huge challenge for a variety of specialists, also for philosophers. One can realize it, if one harmonizes the structure of the city with its functions and if one respect in the same measure the economic, social and ecological criteria by planning the further development of the cities.

Key words: city, urbanization, social ecology of the city, sustainable development, difficulties of life in the city

Streszczenie

Artykuł dotyczy kwestii ekologii społecznej miasta. Ukazuje różne rodzaje zagrożeń, jakie środowisko wielkomiejskie stwarza dla mieszkańców w zakresie stylu życia, dysonansu społecznego, bezpieczeństwa, zarządzania, zniewolenia, znużenia architektonicznego, tożsamości, estetyki, sztuczności, samorządności i demokracji. Współczesne miasta oprócz posiadania pewnych zalet są także źródłem zła. Nie da się powstrzymać ich dalszej rozbudowy, ale można i trzeba podjąć wysiłki na rzecz przekształcania ich w miasta dla ludzi. Jest to ogromne wyzwanie dla różnych specjalistów, również dla filozofów. Można mu sprostać w wyniku doprowadzenia do harmonii struktury i funkcji miasta i przestrzegania w równej mierze kryteriów ekonomicznych, społecznych i ekologicznych przy planowaniu dalszego rozwoju miast.

Słowa kluczowe: miasto, ekologia społeczna, urbanizacja, rozwój zrównoważony

Introduction

In the twentieth century humanity came into a new stage of the development of the civilization connected among other things with the rapid transformation into the urban society. This is proved by two facts. Firstly, according to data from different sources about half world's population live now in cities, while still a hundred years ago the inhabitants of cities were less than 5%. The cities occupied only little area under villages still up to middle of the 19th century; now the number of cities is comparable with the number of villages. About 200,000

people move each day to cities in the world – that is as if a new city such as Santiago de Chile were coming. Europe and North America are already far going urbanized. But in South America or Asia the urbanization progressed so rapidly, that for instance megacities in China each year increased to around more than ten million inhabitants. The tendency to pull in cities and the increasing urbanizing cannot be stopped because cultural, industrial and economic transformations as well as the political movements in the future are inconceivable without further development of the cities. Secondly, the border between the city and the country blurs itself to a

certain extent. Now, owing to modern means of transport and communication one can live everywhere in a small village far from a city and nevertheless live like in a city. So, in fact, nearly all inhabitants of developed countries live in more or less urbanized areas and build the urban society. City – I'm talking here about a large city of over a million inhabitants – is today a highly complex system, and the life in it creates very complicated local and global problems, which cannot be solved in a simple way; not only urban planners, but many specialists from other areas ought to engage in their solution.

The subject of sustainable urban development has two aspects. The first refers to the development of the city in view of its interaction with its environment, and the second concerns the development of the city as a relatively isolated system independently of its environment. The first is the object of interest in a growing number of specialists. Their researches concentrate on the problem how to develop the cities in the future without violating the balance with their environment and what to do that the cities develop without the damage of its environment.

The second aspect concerns the development of the city from the point of view of the interactions between its components, i.e. between residents, between residents and urban infrastructure, and between other elements of city. That is also multidiscipline research object, and its goal is to make the city friendly for its residents so that it should be worth to live in it. Both aspects of contemporary urban development are the biggest global and interdisciplinary challenges. Ecology is a science about the relationship between the artificial environment, i.e. the urban structure and people in which they live, and the natural environment in which the city and its residents operate. It deals with the functioning and development of the city due to the ecological requirements. The city is a formation that is artificially constructed by humans and introduced into the natural environment as something foreign. It is not an object neutral for the environment in which it is located. Developing urban organism is in a sense a parasite on the natural environment – it feeds on its components and devastates them, because it is a specific ecosystem, where there is a significant advantage of destroyers over the producers. It is an acquisitive body, which devours its region, consumes its water and food resources, pollutes the air, and generates huge amounts of waste (Die Stadt der..., 2009). A townner represents for different reasons a specific kind of human being in the contemporary consumer society – the wasteful or prodigal man (*homo prodigus*). City inhabitants in contrary to other localities use many more waters, energy and other goods. This is proved by the fact that only 25 large megacities manages up to 15% of the products manufactured by the global

economy. In fact, large cities are centers where rapidly grow the consumption of all material and spiritual goods, since the demand for trendy products is a lot more in the cities than in the so-called *province*. And the townspeople – especially the richer – are fashionable first and foremost. Cities produce also more waste, toxins, pollutants, and carbon dioxide. Progressing spontaneous urban expansion combined with excessive devastation of the environment and its resources disturbs more and more the balance between cities and their natural environment.

What is a city?

Probably cities exist more than eight thousand years¹. However there is still no complete theory of the city. Therefore, it is difficult to find a satisfactory and universally applicable definition of the city. The city is normally understood as a dense housing area, which is inhabited almost exclusively by the people, which are busy in other sectors than agriculture, mainly in the service sector.

Characteristic features of the city are:

- Dense housing area (mostly high-rise).
- Significant concentration of inhabitants.
- Huge concentration of public institutions, manufacturing and service companies.
- Residual agricultural areas.
- Highly developed technical and communication infrastructure.
- A specific lifestyle.

Exceptions are cities, which do not fulfill these conditions; for example those that were given urban rights long ago by the kings and such, which were recognized as cities for indefinite political or administrative reasons.

The area of the city and the number of its inhabitants are not limited or strictly determined. There are different types of cities, depending on the continents (for example, African, South American, North American, European), religious influences (churches are the central points of cities), and other factors (Klett.de, 2012).

Cities realize different functions inherent only to them. These are:

- The Administrative function (various offices, banks).
- The commerce function (department stores, shopping centers, pedestrian zones).
- The service function (catering establishments, hotels, restaurants, cafes, discos, repair points, medical clinics, hospitals).

¹ Jericho was probably the biggest city around 7 thousand years ago with a population of two thousand residents, <http://www.sfora.pl/Zobacz-najwieksze-miasta-w-historii-swiata-g38996> (23.9.2012).

- The communication function (public transport, railways, road network, parking spaces).
- The cultural function (cinemas, theaters, museums, schools).
- The tourist function (monuments, tourist trails).
- Recreational function (green areas, parks, amusement centers).
- The supply function (water supply systems, power plants, heating plants).

In former times, the defensive function of the city was also important. Defensive walls and fortifications were built to protect urban residents against invaders and marauders. Now, this function is realized in other way. The cities must no more defend themselves against invaders or robbers, but against unwanted settlers. Many cities have already so many inhabitants that their further growth could cause serious disturbances in the realization their substantial functions. Now, city walls and fortifications have been replaced by administrative and economic barrier. Not so long before simply it was forbidden checking in and settling in the so-called *closed cities* in the socialist states. Nowadays, the factors limiting the settlement into the cities (particularly attractive cities) are for example high rents and life costs, usually much higher than in the small towns.

The structure of the city includes geometric, physical (geographical) and social spaces. The geometric space consists of shapes of buildings, districts, transportation routes etc. To the physical sphere of the city belong buildings and their complexes (housing estates, streets, and squares), inbuilt and recreational areas (including green areas), communication networks and people (residents) with their entire material inventory. Social space is formed by different spheres of activity of inhabitants (cultural, commercial, industrial, service, communication, etc.), public areas, and the social structure of the city (e.g. professional, ethnic and demographic). The morphology of the city can be a result of situational, spontaneous or planned urban development. Situational morphology in opposition to planned does not fulfill the requirement of geometric order and of appropriate arrangement criteria of buildings, institutions, companies, etc. due to the physical, mental and temporal distances.

Principles of creating cities in the past and now

In fact, up to the beginning of the twentieth century, the cities mostly developed for the reasons that were in some sense natural:

- The need or desire to be near the ruler (King, prince, mansion, etc., and the higher the ruler was, the more he needed the people, which defended and served him).

- Looking for refuge from the enemies (many cities were forts surrounded by the fortifications).
- Making an intensive exchange of goods (cities were built on important trade routes and their crossings).
- The desire to live closely to workplaces.

Many cities arose for other reasons, inter alia due to the realization of the two parallel tendencies to the suburbanization and metropolization. Suburbanization is caused by the desire of the people to run away from the centers of the big cities, in order to avoid the different inconveniences. It follows also from the social and cultural reasons, e.g. people would like to be closer to nature (for example, in the U.S., the satellites cities arose, because white people are fleeing from African Americans, who are largely inhabit urban centers and – in the opinion of white people – they reduce the cultural standards, e.g. the level of education in the public schools). Whereas metropolization is a consequence of rapid expansion of large cities; and that is caused by the mass influx of people from the small towns to the large cities. People are running to cities mostly with the intention of find a better job and life conditions, and to liberate themselves from the restrictive environmental bonds which are typical for rural areas and small towns. The larger is the city, the weaker are these bonds. The city offers anonymity, what inter alia facilitates criminal activity. Crime rates in cities are much higher than in the country and they grow proportionally to the number of inhabitants. Cities are also attractive for other reasons: they give a chance for better education, they provide greater comfort of living and opportunities to participate in cultural and entertainment events, and they enable wider interpersonal relationships. In the past, the area where a city would arise, had to fulfil first of all the relevant natural conditions (topographic and climatic) and additionally some artificial conditions, e.g. administrative and strategic. Nowadays, I think, more attention is paid to artificial conditions. The natural conditions do not be rather so much important, because modern technology is able to make us independent from them. We can build a city in a cold polar or in hot tropical climate, in areas at risk from earthquakes and in insufficient sunlight, in artificial lagoons or islands, etc. However, it must be emphasized the growing importance of environmental conditions.

The explosion of cities and new challenges for ecology of cities

Explosion of cities rises in consequence of increasing globalization, democratization, and thanks to the great facilities for the translocation of people. The inflow of people to the cities looking for work will increase, because at all times there is a lack of the labor force in the big cities and, therefore, it is

easier to find a job; and besides, in common perception, the city seems to be the best place to live due to the various causes. The city is still like a hole that can absorb more and more people wanting to live there. There is a proverb known since the Middle Ages: *Rural air makes an owner of a man, and the city doing him free*. Hope for prosperity, for getting a job, for better education and for career pushes people to the city as if a magic force. And anonymity frees people from the traditional family alliances and moral standards. That is also relevant for rural people and especially for the young ones. (Lenz, 2010) People pull into the cities, because they expect an easier and more comfortable life there, better access to the education, culture and other services, cheap and serviceable means of transport, better health care, security and supply (Lingenhöhl, 2010). Usually these expectations are not fulfilled. Anyway, the prophecy of Wellington E. Webb, a former mayor of Seattle, that the twenty-first century will be a century of cities, is confirmed². New cities must arise and the cities already existing must be extended; they will transform into multi-million Moloch's: in megacities, urban agglomerations, metropolises and mega-regions³. Now, each of twenty-six megacities in the world counts over 10 million inhabitants, and in a few years there will be twice as many such cities (*Das Jahrhundert...*, 2009). Therefore, one speaks already about *the era of metacities*⁴. At present there are more than three billion people in the cities, that is to say, every second person on Earth lives in a city, and – according to forecasts of city planners – in twenty years this number could increase to five billion⁵. Further urbanization will create various problems in the nearest future. Already we can foresee only a number of them, but not all. Some of these problems are related to the progressive reduction of the agricultural and relaxing areas proportionally to the urban development. It appears a founded fear that too little land area for cultivation

may not be enough to feed nine billion people in the world expected soon, despite the increase in crop yields. And in addition, inhabitants must have sufficient recreation areas and green areas which are important components of the urban landscape. Unfortunately, agricultural areas are reduced drastically and in many countries already approach the critical value⁶. People who have the ambition to build the housing estates of single-family houses on large plots also contribute to the reduction of green areas. These residential complexes must be provided with access roads to the city and with all services infrastructure.

The next problems are related to harmful impact of cities on their natural environment. These problems are generally quite well researched.

Other problems relate to the influence of a city on the health of its inhabitants. Smog and excessive levels of a variety of toxins and waste belong to the serious nuisance of to the life in a big-city environment. Residents of large cities are attacked daily by the smoke, fine dust and a variety of other toxic substances and allergens. Their impact on the human body causes lung disease and mental disorders. Polluted air generates pathological changes in the brain, which reduce the ability to learn, weakens the memory, and cause depressions. Perhaps this explains why – according to statistics – mental illnesses among the urban population are more common than among rural residents (Fonken, 2011). Also the noise, which intensifies itself proportionally to the number of the inhabitants, is harmful in the cities. It also contributes to the systematic deterioration of physical and mental health. It causes diseases of the respiratory and circulatory systems, allergies and depressions.

Ecology of the city has been dealing with these problems for several years. It deals, like city planning, especially with the treats generated by technical infrastructure and logistics (arrangement of offices, shops, etc.). Ecology of the city explores the relationships between organisms living in the cities, between them and urban environment (Niemela, 1999) as well as between the city and its geographic environment. (Rowe, 2000) In particular, it deals with (Jacobs, 1993):

- Problems relating to the material structure of cities (topography and landscape, natural resources and environment, the ways of urban building, all kinds of urban infrastructure, buildings, land management, cultural agencies, institutions).
- Economic issues (the generating of wealth, type of work performed, commercial activity of inhabitants, accumulation of public money, de-

² *The 19th century was a century of empires. The 20th century was a century of nation states. The 21st century will be a 'century of cities'*, http://www.usmayors.org/pressreleases/documents/webb_lyon.pdf (23.08.2012).

³ These predictions are based on the assumption that there will be no disaster, which resulted in drastic population declines.

⁴ Researchers at the United Nations have to introduce this new term to better describe the future of the city. It is the *metacity*. In the seventies of the last century the United Nations introduced the name *megacity* first for the cities with more than 5, then 8, and most recently 10 million inhabitants. And a *metacity* has more than 20 million people; this is so many people as live in Denmark, Norway and Sweden.

⁵ Urban development is so explosive that urban development planners and inhabitants cannot keep up it. See Chloé Lachauer, *Die Welt als gigantische Mega-City?*, in: *Zentrum für angewandte Politikforschung*, München 2005.

⁶ According to estimates, from the areas suitable for the cultivation of cereals and vegetables, and for animal farming, which is about 800 million hectares, is already used about 85 %.

signing and producing of goods and services, cost of living, innovations).

- Ethical issues (decision-making, involvement in the city affairs, justice and fairness of residents, social integration and exclusion, the principles and the laws ruling in the city, availability of services, studies and education, the hierarchy of values).

Unfortunately, the ecology of the city doesn't deal itself with the relations within the social infrastructures in the cities, and particularly with the cultural and spiritual problems. It is not interested in the social, psychological and spiritual threats, which result from living in an urban environment in megacities. In its research area there is no place for the negative influence of physical, technical and social elements of urban infrastructure on inhabitants of such cities. Therefore, the current research field of the ecology of the city should be extending on the above mentioned problems and also on the internal relations within the city: between the various groups of inhabitants, between the different urban objects of the city and between inhabitants of the city and all other elements of the whole its infrastructure.

Problems of social urban ecology

According to the criteria of Western culture urban development contributes to the progress of civilization, because cities are above all driving force of economy. However, contrary to the hopes of people who pull to the large cities in order to find better living conditions, the life is there increasingly more difficult for many reasons. Here, more serious threats are waiting for them (Kohr, 2008). That is confirmed by the scientific institutes which study the problems of the life into the megacities, but there are also people who have a different view⁷. Nevertheless, most researchers have rightly recognized the current development of megacities as a true urban disaster. Physical and mental endurance of people to live in megacities seems to approach to the very critical state. Living in a megacity poses its inhabitants a lot of social, psychological and spiritual problems. For the most part they are effect of unsustainable urban development, but not only of that. I show here the most important of these problems.

Lifestyle

Living in the city causes a radical change in lifestyle. New residents try to live in a way and on a level similar to native inhabitants. The life in the

city ennobles people, although not always, but quite often. This was visible in the old cities where burgher traditions have been preserved. New inhabitants participated in the cultural life of the city, in order to achieve the average standard of the culture of the city and not to differ too much from the native inhabitants. Violation of such standards by the newcomers caused usually sharp negative reaction of the native residents (for example, in Cracow the behavior incompatible with the traditional standards of this city was strong criticized: *It's not in Cracow style*, as in the so-called *society* it was necessary to behave *on the Cracow style*). Now, this phenomenon disappears. The newcomers want to live like wealthy burghers, generally parvenus, whose level of culture often leaves much to be desired. Attempts to promote new standards of culture by newcomers generally were unsuccessful. Very stable and resistant to foreign factors was the immune system and homeostasis of cities, because, I think, that at that time, newcomers arrived not so massively to the cities, as now and the vast majority of the urban population was incumbent residents who successfully tried to keep the old and good urban traditions. This has confirmed the example of Nowa Huta in Poland. Inhabitants of this new socialist city were mostly blue collar workers coming from poor villages. According to the wish of politicians at that time, they had to introduce the canons of socialist culture to the bourgeoisie in Cracow. And it happen exactly the opposite.

Now, many immigrants of the whole world settle into the cities. They bring rural traditions to cities, because a minority of old inhabitants is no able to oppose to them. Different cultures, behaviors and religions mix in big cities. This destroys the old urban traditions, weakens the homeostasis of cities, and causes various inner conflicts.

Social dissonance

In many cities the social gap between rich and poor residents deepened. This phenomenon is not only characteristic for rapidly developing megacities in Africa, Asia and South America where the poor are concentrated in specific ghettos, in slums, which grow in an uncontrolled way (in the 2010, about one billion urban dwellers lived in slums without access to water, electricity and garbage disposal). The privatization of public space in cities is one of the important reasons for the move of people to the slums. Shopping centers, banks, multiplexes, supermarkets, fast food restaurants, boutiques and estates surrounded by walls are multiplying in all megacities over the world (Wasieczko, 2012). They occupy more and more public space of cities. Old buildings, where the flats are generally cheap, are destroyed and new buildings are established, where the rent exceeds the financial ability of many people. City precariat is badly paid and do not have a borrowing capacity. Former tenants were expropri-

⁷ If one believes scientists from University College London, who showed that among the urban population is increased genetic resistance to certain diseases (tuberculosis and lepra), the life in cities can also have a good sides (*Gazeta Wyborcza-Nauka*, 24.9.2010).

ated of their apartments, because they have been taken over by the market and they could not afford to pay the rent. This phenomenon has already a global dimension. The growing gap between rich and poor inhabitants of cities is a very internal contradiction of modern cities. It can lead not only to some urban rebellion, but to a countrywide and even to a world revolution, as it had already taken place in modern history (Harvey, 2012). With satisfaction one should note, that Roger Tognelli, FDP chairman of the City Council of Zurich (Switzerland), want to liquidate this conflict. Better earning inhabitants should give their co-operative flats to the community. He said: *We cannot allow that someone achieves lifelong profits from a very low rent*. His proposal refers to earning over 60 thousand Swiss francs. 76% residents opted for this project. In this way, in 2050 the city will get about 30 % more flats which it will be able to give to less wealthy residents (Metzler, 2012).

Security

Safety of inhabitants in contemporary cities is very important problem. It relates mostly to the threats resulting from increased vehicle traffic on the roads, from being among a huge number of people, and from the high criminality. In contrast to what many people think the urban environment is not safer than rural. Serious dangers for pedestrians create ever faster cars and other vehicles rushing through the streets. Staying in an anonymous urban crowd creates also a lot of dangers. In large population centers – in the streets, in shopping and entertainment centers, in parks, stadiums, railway and metro stations there are multitudes of people, where single persons are unrecognizable, anonymous and invisible. Therefore, they feel impunity and many from them really behave and act with impunity. It contributes to the spread of a multiplicity of crimes: robbery, fraud, rape, theft, murder, etc. This is particularly in the case of situations of the increasing unemployment and pauperization in connection with the ambition to catch up to the standards of material wealthy inhabitants. The crime rate grows proportionally to the number of inhabitants and to social density in the city. This is one of the serious plagues of megacities. In despite of the popular opinion, staying among lot of people does not reduce the threats for an individual person. It increases in denser networks of social dependencies and interpersonal relations. Safety of an individual is inversely proportional to the size of the group in which he stays. As a matter of fact, one is safest when alone and independent from anybody.

Management

Management collapse threatens the big cities regardless of the support by modern informatics technology (Kraas, 2009). Even great achievement of intelligent management systems in the form of the

so-called *smart grids* does not help. Their functioning is based on the computer supporting control of communication networks, financial services, radio and telephone networks, water supply systems, power stations, heating plants, Internet, etc. However, the huge chaos can occur in the case of failures (Bornebusch, 2010). Dennis L. Meadows, co-author of the revolutionary book *Limits to Growth*, in an interview published in *Pictures of the Future – Building Greener Cities*, warned not to see the Holy Grail in technical solutions. New technologies must necessarily grow, but one should not believe that they themselves will solve our problems (Liebeskind, 2010). Management efficiency reduces proportionally to the size of the city and to density of its population. Experts gave the critical value for the number of the population in megacity, the so-called pain limit. Exceeding leads to the disorganization of the city management.

Enslavement

In large cities the degree of the enslavement increases due to the durable reduction of the free living space of its inhabitants. This refers to physical, social and psychological residential milieus. Each human, like other organisms, requires an appropriate area, which only he and no other can use. This area gives him the liberty feeling and ensures his privacy and security. I call it *free life milieu of an individual*. With the increase of the population density into megacities – and it is within the range of 1,800 inhabitants (New York) to 44,400 inhabitants (Dhaka, Bangladesh) per square kilometer – this life milieu is reduced gradually and in many cases it approaches the critical value (World Urban Areas..., 2012). Hence, the subjective feeling of freedom by the inhabitants and their objective degree of freedom are continually reduced. Legal, cultural and moral restrictions contribute also to the reduction of their freedom. These restrictions appear ever more and one should them rigorously enforce, if one wants to keep a social order and avoid conflict situations into the large masses of the people. The enslavement of the inhabitant of a large city manifests itself for example in form of the feeling of the inferiority complex. It occurs above all where dominate high buildings and famous skyscrapers. And the expansion of cities will have to make more in the third dimension of space (in height) than in the other two (on the plane) because of the territorial limitations. Architecture of skyscrapers often overwhelms a man and scares him. Staying within it, he feels insignificance, littleness and – in consequence – he experiences the depression. This is because high buildings violate the natural harmony between a person and his urban landscapes due to the disproportion of geometrical dimensions. High buildings weigh down the people and *crush* them with their weight and size. This phenomenon also occurs in the case

of large squares and avenues of the city, which are inseparable elements of the landscapes of big cities. Staying on such squares or arteries we feel great freedom proportionally to the size of their space, but at the same time we feel our inferiority and loss on such a large area. In addition, the inhabitant of a large city feels lost, because nearly always he is in a crowd. Wherever he is, he is surrounded by many people. And an individual nowhere does feel so lost and lonely, as just in a crowd or mass⁸. The feeling of the restriction of freedom, loss and loneliness – characterizes inhabitants of large cities – also worsens their mood and reflects negatively on their psyche and mental state. *Globalization causes that everywhere in the world people are moving from the countryside to the cities. As migrants, they are in their new home often excluded and sometimes strange. This causes additional stress. However the stress and social isolation pose danger to their psyche* (Meyer-Lindenberg, 2012).

Another aspect of the enslavement is reduction of privacy. It is particularly threatened into large cities because of great social density, of living into multi-residential houses, of continuous being in numerous gatherings of people, and of monitoring the public space with all kind of hidden cameras (Zukin, 2009).

Architectural weariness

The control of the large cities by world-wide largest financial and service centers as well as the tendency to build to lowest costs, fast and according to architectural standard projects, cause the standardization of the urban landscape. In each city one sees the same architecture. Everywhere one meets almost the same institution buildings, standard settlement, houses, shopping centers etc. Due to the building according to the architectural world fashion the view of the city is becoming more and more boring for permanent inhabitants and unattractive for visitors. The monotony of the urban landscape results also from the difference of the perception of space by the town designer and inhabitants. Multiplicity of the building styles melts in the standardization. This causes weariness and has also negative influence on the tourism. For what to drive to other cities, if one sees everywhere the same with the exception of some unique monuments and landscapes. However, the advantage of standardization is that everywhere in each strange city one can feel like home.

Identity

The growing mass migration of people to big cities from different continents causes that different cultures and sub-cultures, languages, beliefs, traditions, lifestyles and habits mix in them. That is

good, because cities become more colorful. This somehow balances the urban architectural weariness. But simultaneously this weakens their identity. The inhabitants of large cities with the same ethnical, cultural, and religious roots form separate and relatively isolated groups. Thus, big cities are gatherings of dissimilar groups of inhabitants. They have different interests, habits, lifestyles and sometimes contradictory goals. This can cause conflicts between these groups. The greater is the variety of inhabitants groups, and the more conflict between them, the weaker is the identity of the city. The transmigration, mainly caused by the necessity for the frequent changes of the job, makes now city dwellers much less settled, when they were in the former times. In earlier times, several generations lived often in one city and even in the same house or apartment. Therefore, the inhabitants of the city formed a more stable or static social system. Today, they form a highly dynamic social system (something like to the state of plasma in physics), where everything – people, shops, infrastructure, customs, etc. – change ever faster, more turbulently and chaotic. It is not surprising, because we live in a true turbo-world (Sztumski, 2006a). Transformation of the inhabitants of the city from the static to the dynamic system reflects itself into the change of the identity of the city from the material identity to the functional. In the past, the essence of the city was determined more by its material objects (people, buildings, streets, shops, etc.), which are more stable than its functions. Therefore, the nature of the city was determined by its material identity. Now, the functions of the city (economic, touristic, cultural, administrative etc.) are more important than its material objects. Therefore, the nature of the city is more determined by its functional identity. Proportionally to mixing of different people, cultures, languages, traditions, etc. cities become ever more similar. Modern megacities have comparable demographic and urban landscape – in each of them one can find similar-looking people, similar types of buildings and similar architectural systems. Financial centers, administrative building, work establishments, schools and hospitals are built in one same way. In the past, a lot of cities had something specific and unique: folklore, slang, songs, habits, colorings, buildings, restaurants, hotels, places, streets, and manners of being. All this forms the nature and the spirit of the city. Today, all specific elements of the city are in rudimentary condition and gradually disappear (Sztumski, 2000).

The aesthetics of a big city

With the aesthetics of big cities something is getting worse, even though they are more and more well-kept, and the buildings and streets renewed and modernized. In many cases there is architectural dissonance resulting from the confusion of styles

⁸ David Riesmann, Nathan Glazer, and Reuel Denney pointed this out yet in 1950 in the book *The Lonely Crowd*.

and types of old buildings⁹. In the direct neighborhood of low buildings in gothic, renaissance and baroque style there are ultramodern skyscrapers made of glass and metal¹⁰. It is really a shocking view unbearable for people sensitive to an aesthetic harmony. Another problem is the construction of new, multistory buildings generally in the neighborhood of earlier raised and low houses so that they block the view from windows, or significantly reduce the viewed space. It is also one of the factors that cause an increased sense of enslavement. It is easy to see that being in a closed and visually very limited space causes the mood of despondency and it is the source of depression of the urban population. Numerous studies of psychologists confirmed this.

The dominance of artificiality

The city is something artificial already by its nature. And constantly one adds to it ever more artificiality in the form of synthetic material and unnatural cultural components. Natural urban green areas disappear due to the fast expansion of the cities, which is subordinated to economic criteria. Building and urban infrastructure arose in these areas. Various plastic substitutes are introduced instead of natural green. By the way, this is another example of disrupting the homeostasis of human (city inhabitant) with the nature. Artificially established gardens on balconies and roofs, artificial lawns, planting trees or even the creation of artificial parks in the realization of the idea of the gardens cities of tomorrow will not restore this homeostasis. Artificial or *soulless green* is able to replace the natural green only in visual aspect. Cheap and fast architecture replaces natural building materials, called traditional, by artificial. For example, instead of the traditional bricks made of clay it uses plates made of different synthetic materials. Another thing is the not entirely explored impact of synthetic building materials and the saturation apartments with various synthetics on the health of residents. Artificial human behavior and customs dominate a lot more in the cities, than in the villages. This is forced by fashion and by the desire to imitate the others. In addition, in big cities it is easier to produce the artificial demand for many goods and services, which are unknown to the people in the small cities or in the villages.

Self-government and democracy

The real self-organization of townspeople, which is the basis of democratic management of the city, should not be reduced to indirect governance by municipal authorities – to the president or the

mayor and to the city council. It is best, if the people decide important issues of the city indirectly. However, in the case of a large number of people it is difficult to achieve such indirect democracy and in megacities it is simply impossible. How could million people decide – everyone personally – on what happens into such cities? Directly, it is impossible. One could try to reduce the number of the intermediate stages from the individuals to the municipal authorities, e.g. by a referendum (Makowska, 2012). That would be reasonable, if the referendum is representative, that is, if a relatively large number of people participates in it. But in practice, the presence in elections and referendums is not too big: it is inversely proportional to the number of inhabitants and directly proportionally to the extent of the affair. The fewer inhabitants are concerned with the affair, the more would like to express their opinions. The affairs in big cities usually concern large territories and many people. The same could be referred to other possible forms of direct governance: public debates, consultations, etc. It naturally raises a question about the maximum or optimal number of the inhabitants in the city, where the inhabitants could govern really directly. That is the question about the limit value of the inhabitants of the city, which is really democratically and not illusorily managed by the urban functionaries. Undoubted fact is that the management of the city by the officials, despite so-called *democratic choices* or election, is not fully democratic. In the opinion of people, presidents of cities behave like former feudal lords and the city councilors like courtiers at feudal. In the effect, the idea of democracy was reversed: the city and its functionaries are not for inhabitants, but on the contrary. Inhabitants are indeed a burdensome addition to the city, because they disturb various investors, corporations etc. in their business. Also for other reasons related to the correct functioning of the city (purchasing, export and utilization of wastes, communication, access to offices, shops and workplaces, etc.) it should not exceed the specific number of people.

Some planners think that such a limit is 300 000 inhabitants, though once in Czechoslovakia it was considered (and respected this to a certain extent) that in the cities there should not be more than 100 thousand inhabitants; that would guarantee the optimal realization of their fundamental functions. Maybe it was dictated by military assumptions connected with the defense strategy of the Warsaw Pact. I think that it is impossible to determine the optimal number of urban dwellers in general, but only in relation to a particular city and depending on internal and external factors and on economic, demographic, geographic, climatic, social, military, and other criteria.

⁹ Architectural dissonance is not visible only in big, but also in small cities and villages.

¹⁰ A typical example of such dissonance is the Alexanderplatz in Berlin and the area around the railway station in Cracow.

Compatibility of the morphology with functions of the city

The development of large cities brings an enormity of bad effects, but one cannot stop it, because cities will be still the centers of civilization, trade, science and art. It should not, however, allow them to grow in an uncoordinated manner. Cities should be developed according to the idea of sustainable development for the good of the cities and their inhabitants. Further development of cities according to this idea must be well-planned and controlled; particularly it has also to take into account ecological criteria. These requirements are included in the idea of so-called *smart cities*; it is already partly implemented. Sustainable urban development requires the involvement of many experts – representatives of different subdomains of science, architects, economists, ecologists, urban planners and politicians. Ethicists, aestheticians and philosophers, who especially deal with the eco-philosophy and the ecology of the city, may be even useful here in some way. Relations of architecture with the philosophy have been known for a long time. Architecture, like any other activity, requires some thought to make it effective, also a philosophical reflection. Already in the first century BC, Vitruvius wrote in *Nine books about architecture* that practice and theory are needed in order to build. And *a theory can be understood as any methodical structured way of thinking* (Illies, 2009), and therefore also the philosophical thinking. Vitruvius claimed that philosophy is needed also to the architect for this reason, because *it forms magnanimity at architect and he teaches that he should not be conceited, but rather easy to contact, fair and honest, and – what is most importantly – free from greed, because no work can be done without conscientiousness and integrity. An architect (...) should guard with seriousness his dignity and take care of a good reputation, and this is recommended by philosophy* (Petkiewicz, 2010). Extremely important challenge, defined by the ecology of the city, stands before architects, urban planners and other experts in the field of ecology, sociology, management, psychology, aesthetics, etc. – to try to make the life easier for city dwellers, so that they more than ever take care of the proper development, of the urban landscape and protect it. This favors their life and makes it enjoyable. Unfortunately, further unsustainable development of the city, which still creates greater threats to the internal and external environment of the city and its people, is not conducive to this. Some of these threats are related with functions of the city, and others with its structure. Most of them are discussed in the previous section. The idea of the sustainable development, understood as a balance or a golden mean between contradictions, which lug the urban organisms, could help, to real-

ize this challenge (Sztumski, 2006b;2011). This concerns the balance:

- Between the various functions of the city (all functions material and spiritual should be treated equally important).
- Between the components of the morphology of the city (all elements of the structure of the city should be regarded as equally important).
- Between the structure of the city and its functions (elements of the structure should be present in such numbers and form, to enable it to function optimally).
- Between the traditional and modern architecture of the city.
- Between the old urban folklore (the spirit of the town) and a modern lifestyle¹¹.

It has to be so because the city is an organized system and must be considered holistically. It is a dynamic system, but rather yet dissipative one, while there are already some symptoms of a tendency to transform the city from unsustainable to sustainable system, for example, increase of fluctuations and turbulence. One can indicate two essential reasons for this phenomenon: the excessive mobility and dynamics of urban development, and the increasing condensation of physical and social urban space. In spite of this, a mechanism of homeostasis works in the dynamic system *city*, thanks to what city is relatively stable and ordered. This homeostasis must be protected. Harmonizing the morphology of the city with its functions allows obtaining this goal. In the case of a disruption of this harmony it will take place a disappearance of the city in its present sense¹². It also concerns the balance within the areas of biotic and social diversity in the city: ethnical, class, professional, cultural, generational etc. But this requires the compromise between economic, social and ecological criteria as well as the equal treatment them in the further development of urban planning.

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¹¹ At the World Congress of Architects in Naples in 2000, I appealed to respect the traditional lifestyle in the old cities and to protect the spirituality of the cities.

¹² Depopulation of large cities and scattering them as a result of suburbanization contributes also to the disappearance of cities.

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Megatrends and Sustainable Development

Megatrendy a rozwój zrównoważony

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Abstract

The last decades of the twentieth century and the beginning of the third millennium saw the significant acceleration of globalization processes, which has fundamentally changed and is still changing the world order and the face of the Earth. The qualitative changes that affect the nature of today's global economy require measures necessary for the adjustment to the reality and the specific nature of international relations. This is of particular importance for the principle of sustainable development, which depends on the on-going civilizational change largely shaped by the social expectations. Therefore, the analysis of megatrends in the future civilizational changes becomes essential in the context of the achievement of sustainable development, which is discussed in this article. The discussion focuses on the processes of urbanization, the development of air transport, public networking, institutional changes, and the environment, which have been identified as the key elements of civilizational change in the 2050 horizon, determining sustainable development in its economic, social, and environmental dimension.

Key words: sustainable development, megatrends, urbanization, transport, public networking, institutional changes, environment

Streszczenie

Znaczne przyspieszenie procesów globalizacji obserwowane w ostatnich dekadach XX wieku i na początku trzeciego tysiąclecia zasadniczo zmieniło i zmienia porządek i oblicze świata. Zaistniałe zmiany jakościowe wpływające na naturę współczesnej gospodarki światowej wymagają działań dostosowawczych do dzisiejszych realiów i specyfiki stosunków międzynarodowych. Ma to szczególne znaczenie w odniesieniu do zasady zrównoważonego rozwoju, której realizacja uwarunkowana jest zachodzącymi zmianami cywilizacyjnymi ukształtowanymi w dużym stopniu przez oczekiwania społeczne. W związku z tym istotą nabiera analiza megatrendów przyszłych zmian cywilizacyjnych w kontekście wprowadzania zrównoważonego rozwoju w życie, co stało się przedmiotem niniejszego artykułu. Rozważania skoncentrowano wokół procesów urbanizacji, rozwoju komunikacji lotniczej, usieciowienia społeczeństwa, zmian instytucjonalnych oraz środowiska, zidentyfikowanych jako główne czynniki zachodzących zmian cywilizacyjnych w perspektywie roku 2050 i warunkujące tym samym rozwój zrównoważony w wymiarze ekonomicznym, społecznym oraz środowiskowym.

Słowa kluczowe: megatrendy, rozwój zrównoważony, urbanizacja, transport, usieciowienie społeczeństwa, zmiany instytucjonalne, środowisko

Introduction

The future is a fundamental element of the sustainable development concept. This is clearly highlighted in the definition included in the Brundtland Report, where sustainable development is defined as *development that meets the needs of the present without compromising the ability of future generations to meet their own needs* (WCED, 1987). This definition suggests that civilizational changes should take into account not only of the present, but also of the needs of the generations to come. In addition, the key element of that concept is the fear of the environmental limits to growth (Meadows et al., 1972). What it means in practice is that we need to monitor and control the rate of consumption of natural resources so as to prevent their depletion. Those measures should be taken with due regard to the rules of social justice, and therefore should satisfy the needs of the poorest societies and, at the same time, reduce the consumption rate in highly developed countries (Dresner, 2002).

Past experience in the implementation of sustainable development leads us to the conclusion that the concept, on the one hand, is becoming a widely recognized political movement; but, at the same time, it seems to be nothing more than an empty slogan having very little in common with the reality of today's world (Pawłowski, 2010). True, we have been witnessing many attempts aimed at implementing the principle of sustainable development, especially as part of the EU energy and climate policy. However, those efforts look more like an attempt to find one's way in the dark rather than heading towards a pre-defined goal (Prandecki, 2011a). This is mainly due to the fact that the concept is very general and there is no set of universally applied measures to determine whether or not a given initiative is consistent with the underlying concept.

There is a large body of publications prescribing the implementation of sustainable development (*inter alia* Edwards, 2010; Korten, 2010; Jackson, 2009). They are usually limited to rather general messages suggesting the need to change the public approach to consumption and possession of material wealth. Those analyses present idealistic visions without considering the changes in today's world. Such an approach is their major weakness. Therefore, it seems only justified to analyze the current scenarios of the world's development and to determine whether it is at all possible to achieve sustainable development in the context of the expected megatrends.

The term *megatrends*, which was first used by J. Naisbitt, has been known since early 1980s (Naisbitt, 1982). However, despite a number of publications devoted to that concept (Naisbitt, Aburdene, 1990; Naisbitt, 1996), Naisbitt did not propose any definition of the term. As a result, it was interpreted quite

freely in the years that followed. Therefore, a number of different approaches can be found in the literature, and there is no generally accepted set of phenomena defined as megatrends, nor is there a set of qualities that should characterize that concept. Megatrends can include such general concepts as the waves of civilization described by A. Toffler (Toffler, 1982), as well as much more specific phenomena such as terrorism (Muszyński, 2001). In the present article, megatrends are understood as the global forces affecting the state, the market, and the society, acting many years in advance. In the context of sustainable development, the authors believe that the following phenomena will have the most significant impact in the coming decades:

- a) urbanization,
- b) development of air transport,
- c) public networking,
- d) institutional changes,
- e) growing pressure on the environment.

In addition to the above factors, there are a number of other significant civilizational changes. However, the authors decided to put the spotlight on the above phenomena, as they are highly dynamic and will have a significant impact in the future. As a result, the expansion of the world's population has been dealt with only marginally, while the consequences of changes resulting from urbanization processes were highlighted to a greater extent. That phenomenon is often overlooked in analyses, but it is as important for the consumption rate as the world's population growth. By the same token, the role of air transport was highlighted, while the most environmentally harmful mode of transport, i.e. road transport, was omitted in the article. Air transport develops much more dynamically and is also more significant as a driver for global change.

For the same reason, the article focuses on changes resulting from the ever-increasing access to the Internet. In addition, as the entities operating in today's global economy are becoming ever more interconnected, there is a need to develop certain institutional solutions at the regional and global level adjusted to the present and future reality, in the context of both megatrends and sustainable development.

Of all the above considerations, the environmental aspect is the one that is least obvious. The ever-increasing pressure on the environment is beyond any doubt, but it is a consequence of changes occurring in the areas discussed above. Therefore, it is difficult to treat it as a separate megatrend. Still, the authors decided to discuss it separately in order to emphasize the environmental impacts of the changes that are taking place in today's world.

Urbanization

The consequences of the world's population growth have been widely discussed. The problem was high-

lighted already in the eighteenth century by T. Malthus. It is estimated that the world's population will exceed 9 billion by mid-century (United Nations, 2011), and additional two million people will need more water, food, land, and other resources. However, the consumption needs of the world's population will be multiplied by the process of urbanization. This process has been unfolding gradually for the past three centuries. It was triggered by the industrial revolution in the second half of the seventeenth century, and gained momentum since the second half of the twentieth century. Back in 1900, only 13-14 per cent of the world's population lived in towns or cities, but already in 1930 that number reached 30 percent. Since then, in less than one century, half of the world's population moved to urban areas to reach 50 percent in 2008. That trend is expected to continue; according to the United Nations' forecasts, 70 percent of the world's population, i.e. about 6.4 billion people, will live in towns or cities in 2050.

That direction is clearly visible in a number of countries. In 2010, the following countries recorded the urban population index exceeding the UN forecasts: Belarus (75%), Belgium (97%), Brazil (87%), the Czech Republic (74%), France (85%), South Korea (83%), Libya (78%), Germany (74%), Russia (73%), the USA (82%), Sweden (85%), Switzerland (74%), and the UK (80%) (CIA, The World Factbook, 10.09.12). It should be noted that the above list does not include the so-called *city-states*. Poland, with the urban population index of just over 60 percent, falls behind the highly urbanized countries.

Dynamic urbanization processes are particularly visible in fast-developing countries, one example being the People's Republic of China. Back in 1978, only 18 percent of China's population lived in towns or cities, but in 2011 that number exceeded 51 percent. The high pace of urbanization in China and in South-east Asia is expected to continue in the future. A similar phenomenon is expected in the Middle East and in Africa.

The urbanization rate will grow mainly in large population centers, i.e. metropolises and megacities. In particular, it can be observed in megacities with the population exceeding 5 million or in conurbations with the population exceeding 8 million. In 2011, there were 41 such population centers, mainly located in Asia (20 biggest megacities are listed in Table 1). According to Airbus, their number will reach 92 in 2031 (*Global Market Forecast*, 2012). They are still expected to be located mainly in Asia (Table 2).

In the twenty-first century, cities (especially metropolises and megacities), will not only be the places where the majority of the world's population will live, but they will also play a major role in the future development of the world. With income above average, easier jobs (usually without placing much burden on health), multiplied consumption of products

and services, and better access to culture, living in a city seems to offer the improved quality of life. Cities are also characterized by enormous dynamics of growth, productivity, and business innovations. Major academic, research and scientific centers are located in cities, and they are usually major centers for the industry and the provision of services. Some cities are also big financial centers, such as New York, Shanghai, or Tokyo. Such megacities offer great conditions for the creation of new jobs, both in the industry and service provision sectors, and are major drivers of rapid economic growth. Unemployment rates in big cities are low. With their size alone, they create great opportunities to attract foreign investments.

Table 1. Cities with a total population exceeding 10 million. Source: own study based on *CIA: The World Factbook* (10.09.12), data for 2009.

No.	City	Country	Population (in mln)
1.	Tokyo	Japan	36.507
2.	Delhi	India	21.72
3.	São Paulo	Brazil	19.96
4.	Mumbai	India	19.695
5.	Mexico City	Mexico	19.319
6.	New York-Newark	USA	19.3
7.	Shanghai	China	16.575
8.	Kolkata (Calcutta)	India	15.294
9.	Dhaka	Bangladesh	14.251
10.	Karachi	Pakistan	13.125
11.	Buenos Aires	Argentina	12.998
12.	Los Angeles-Long Beach-Santa Ana	USA	12.675
13.	Beijing	China	12.214
14.	Rio de Janeiro	Brazil	11.836
15.	Manila	Philippines	11.449
16.	Osaka-Kobe	Japan	11.325
17.	Cairo	Egypt	10.902
18.	Moscow	Russia	10.523
19.	Istanbul	Turkey	10.378
20.	Lagos	Nigeria	10.203

On the other hand, life in a city is faster, it consumes more resources (especially energy), longer communication routes are necessary, there is more exposure to noise, the natural day-night cycle is disrupted, and the increase in population causes social changes, making people less interested in the affairs of their local community.

As far as the social and environmental aspects of sustainable development are concerned, it is obvious that today's cities do not go in that direction. There have been attempts at building cities that meet the requirements of sustainable development, but they were limited to smaller cities. Given the rate at which that concept is spreading, no radical changes can be expected in that area.

Areas of poverty and deprivation, or *hidden cities* as the UN calls them, are an inherent element of megacities. Those areas are controlled by organized cri-

Table 2. Most dynamic cities (megacities) in 2025. Source: *Urban World: Cities and the rise of the Consuming Class*, McKinsey Global Institute, <http://www.mckinsey.com/mgi>.

City	Country	Population (in millions)		GDP in USD (\$) billions			
		2010	2025	2010 (in billions)	2025 (in billions)	Total growth	Growth in %
1. Shanghai	China	22.3	30.9	250.7	1112.2	861.5	344 %
2. Beijing	China	18.8	29.6	206.2	1027.9	821.7	398 %
3. Tianjin	China	11.1	15.2	128.8	624.4	495.7	385 %
4. São Paulo	Brazil	19.7	23.2	437.3	912.9	475.7	109 %
5. Guangzhou	China	11.1	14.9	146.1	573.0	426.9	292 %
6. Shenzhen	China	10.4	13.7	141.5	523.6	382.1	270 %
7. New York	USA	18.9	19.7	1180.3	1553.1	372.7	32 %
8. Chongqing	China	15.7	19.4	88.6	458.6	370.0	418 %
9. Moscow	Russia	11.6	12.7	325.8	688.5	362.7	111 %
10. Tokyo	Japan	36.4	36.7	1874.7	2218.6	343.9	18 %

minal groups involved in drug dealing and prostitution, and their rape and murder rates are very high. As a result, the social gap is growing and the number of socially excluded people is rising.

Air transport

Cities are not only human settlements; they are also gigantic gateways for business. This is most visible in the case of ports with large container terminals. More than 90 percent of all goods are transported in such containers. In 2009, there were more than 4.6 thousand container ships with about 29 million containers; in 2008, they transported about 500 million containers (until the outbreak of the global financial crisis). By 2025, the volume of goods handled in container terminals will increase by about 2.5 times compared to today's volumes. However, it is air transport that will trigger the most significant changes on a global scale.

Large airports handle the traffic of millions of passengers on numerous routes and certain types of cargo traffic (including electronics and perishable goods). We can already distinguish between cities that have large airports and those that do not; in the future, the former will develop more quickly than the latter. Further development of cities, economic growth, and societies becoming richer, especially in Asia, will be the key drivers of air traffic growth, and will stimulate the economy as a whole.

Large passenger traffic between megacities will depend especially on the airplane fleet that includes the biggest, wide-body long-haul passenger aircraft (VLA – Very Large Aircraft), such as Airbus A380 Superjumbo or Boeing 747 Jumbo Jet. They are used for long-haul flights and can carry as many as 853 passengers.

The growth in air transport is such that it should be considered a megatrend in its own right. Since 1970, the number of passengers doubled every 15 years. Deregulation of air traffic in the USA, which started back in 1977, had a major impact on its growth. The number of flights went up, while ticket prices went

down. In 2011, regular airlines carried 2,738 million passengers on scheduled flights (2,681 million in 2010) and 51.4 million tonnes of cargo, which represented the air transport performance of 5.2 trillion revenue passenger-kilometers (RPK) and 181 billion revenue tonne-kilometers (RTK). Compared to 2010, the transport of passengers went up by 5.6 percent, while the transport of cargo remained at almost the same level (Litwiński, 2012c). Airports all around the world handled the traffic of 5.1 billion passengers, and aircraft carried 88 million tonnes of cargo, with 70 million take-off and landing operations. The highest growth was recorded by airports in South America and the Middle East (Litwiński, 2012b). This represents a major step forward compared to the past. Back in 1977, there were about 290 regular airlines in operation, with about 6,500 jets in service. In 2011, more than 900 airlines were in operation and the number of airplanes reached 19,890 (*Current Market Outlook*, 2012). In the next 20 years, the number of passenger and cargo aircraft will double (Table 3). In 2031, 39,780 jets are expected to be in service, including 36,580 passenger aircraft and 3,200 cargo aircraft. In addition, the average capacity of passenger aircraft will increase by about 20-25 percent.

Table 3. Passenger and cargo jet aircraft in service in 2011 and the forecast for 2031. Source: own study based on *Current Market Outlook*, Boeing Company, 2012.

Aircraft size	2011	2031
Very Large Aircraft (VLA): A380, Boeing 747	790	1030
Wide-body (twin-aisle) aircraft	3,710	9,110
Narrow-body (single-aisle) aircraft	12,610	27,430
Regional jets	2,780	2,210
Total	19,890	39,780

According to estimates prepared by Boeing analysts, the passenger transport performance will increase from 5.2 trillion revenue passenger-kilometers (RPK) in 2011 to 13.8 trillion RPK in 2031. The largest growth in air traffic is expected within North

America – 1,459.61 billion RPK (952.94 billion RPK in 2011), within China – 1,448.40 billion RPK (380.11 billion in 2011), within Europe – 1,305.30 billion RPK (659.48 billion in 2011), and between Europe and North America – 901.20 billion RPK (430.20 billion in 2011) (*Current Market Outlook*, 2012).

In the next 20 years, the global annual average economic growth is expected to reach 3.2 percent (of which 5.0 percent in developing countries and 2.0 percent in developed countries), which will entail the related growth in the airplane fleet by 3.5 percent per annum, and an increase in transport performance of 4.0 percent for passenger traffic and 5.2 percent for cargo traffic (*Current Market Outlook*, 2012). In comparison, the Airbus forecast for 2012-2031 expects the annual growth of 4.7 percent for passenger traffic and 4.9 percent for cargo traffic, which means that the number of passengers will increase from about 3 billion in 2011 to 7.5 billion in 2031 (*Global Market Forecast 2012-2031*).

Transport, in particular transport by road, is one of the key sources of pollution, which means that it has a major environmental footprint. However, in the context of sustainable development, air transport is much more important. The most significant effect of air transport is the flow of ideas. Despite global networking, most artistic creations and inventions still result from direct contacts. J. Naisbitt referred to that phenomenon as *high touch* (Naisbitt, Philips, 1999). Air transport allows for the integration of different groups, which, on the one hand, increases the flow rate of ideas such as fashion, but also the awareness of threats to the environment. The impact of airlines on the flow of information and knowledge cannot be expressed in quantitative terms. But it cannot be disregarded on those grounds. The current direction of changes can be considered unfavorable. In addition to the negative impact on the environment, the social effects of communication lead to globalization in the social dimension. Unfortunately, it is based on Western consumption patterns, and developing countries tend to copy those patterns without any second thought. As a result, the impact of air transport on sustainable development will be much higher than the environmental costs attributable to all the remaining modes of transport.

The network society

It is not easy to answer the question what the world will look like in 2050 as a result of the emergence of the network society, and how the society itself will change. The reason is (Morawski, 2010) the number of the unknowns (as we do not know the limits of expansion of the cyberspace yet) and the interactions between them (new global configurations).

In addition to the currently recognized global megatrends, new paradigms need to be found to meet the challenges of the changes which the global society is

undergoing. One such paradigm may be based on the potential of the global network society, or global networking.

Networking offers unique opportunities for cooperation, even if the world prefers the competition model (Zacher, 2012), which is mainly due to the fact that people tend to focus on their own interests, especially in terms of business. On the other hand, networking offers a global network in the cyberspace, including global network communities such as Facebook, which currently has more than 1 billion users – or rather participants. We are living in the network society, but the nature of the future social relations will depend not only on the technical characteristics of the network itself, but also on the dynamics of changes in our social reality, as a derivative of the related social processes such as the ageing of societies, population growth, depletion of natural resources, global migrations, etc. (Chimiak, Fronia 2012).

Global networking may become useful for the processes of management of social changes, including their dynamics and unpredictability, but if there is no clearly dominant paradigm determining the criteria, characteristics, or principles of the so-defined *global governance*, it will be necessary to develop an overriding principle, taking precedence over the mechanisms of cooperation, competition, interdependence, or domination, which will be used and established in the future. That principle may be the care for the common good – i.e. the Earth's remaining natural resources that are becoming scarcer. But it may also be any particular interest of a dominant player, or a further increase in enormous consumption, or smaller regional and local interests.

In line with those processes, the global architecture of the current institutional system will also change. The institutionalization of the efforts taken to prevent the negative effects of climate changes is a sign indicating the current trends (Fronia, 2011). The failure and inefficiency of the so-called *climate summits* triggered efforts taken on a smaller scale (Fronia, 2010). The criterion underlying the network cooperation was not related only to geographic location, political system, or stage of development, but primarily to the overriding objective, i.e. the prevention of negative effects of climate changes. However, there are other, less positive aspects of the ever-growing networking dimension of institutional cooperation. First of all, it is less permanent than, for example, the former system of cooperation within the United Nations; it often happens on an ad-hoc basis and is usually related to specific matters which are considered significant for a given group of countries or for other international players (The mixed interdependencies between national and non-national players on a global level are another problem. Both types play a major role in the international arena, and their mutual relations are becoming ever more complex).

Using the potential of the ever-growing global interdependence between the entities participating in the information exchange network, the cooperation between them, decision-making processes, and taking decisions on the direction of changes regarding the development of the specific forms of that cooperation, will influence the quality and stability of the local systems. At the lowest level, it will be important for the functioning of local communities. For instance, the prevention of conflicts arising from the scarcity of drinking water in the areas most affected by that problem will consist essentially in looking for ways to meet the challenges faced by the inhabitants of the most water-stressed regions. Considering the type of that problem, such conflicts will be managed more at the level of cooperation within a network of global interdependencies.

Those activities may take the form of empowerment (as in the case of a number of social movements) or instrumentalization (as in the case of most business activities, be it in the form of transnational corporations or in any other form, also including non-organized crime). They may also foster the development of knowledge (cooperation between scientific groups all around the world, or the Open Access initiative).

From that perspective, activities such as the anti-ACTA movement, or protests in Tahrir Square in Egypt, which led to political changes, may be the signals of the future forms of functioning of the global network society. As Castells (2012) points out, the use of state-of-the-art technologies is only a vehicle for more serious social processes. The contradictions and conflicts in certain societies will be the driver of changes in the future. Their proper interpretation over the course of the next 40 years will therefore depend on the adoption of an overriding principle of *global governance* as part of the international interdependencies based on networking, which will reduce the risk of occurrence of a global disaster, prevent the humanitarian, political and economic crises, and mitigate the risk of transnational conflicts (Fronia 2011; Fronia 2008).

Based on the above arguments, we believe that, in the context of sustainable development, public networking should be treated as an opportunity, not a threat. Network societies are more aware of the active role of an individual in the society. Just like in the cases described above, we can expect that the awareness of certain threats will lead to the integration of the interested persons. At first, those initiatives will be related to individual events only. But in the long run, we can expect a more extensive cooperation for the purpose of implementing the overall concept.

The institutional dimension

In addition to the question of public networking, the changes and challenges in the institutional dimension are related also to the economy in a broader sense, which is the outcome of the processes manifested in the intensification of global interactions, elimination of geographic barriers in the flow of goods, capital, services, technologies, information, and ideologies, the development of mass culture, and more intensive economic relations, both bilateral and multilateral. It all has increased the interdependencies between individual entities participating in the international exchange, emphasizing the very essence of cooperation and leading to the transformation of the world's economy into an integrated system of markets, and, as a consequence, to the evolution and change of the very nature of international relations (Liberska, 2002; Zorska, 2002; Akyüz, 2003; Stiglitz, 2004; Nawrot, 2008). In the future, those phenomena are expected to continue or even become more intensive. Their consequences will be of particular importance to the environmental aspects of sustainable development. Globalization, combined with social changes, will boost consumption, which will also increase the volume of international trade and the resulting pressure on the environment, with growing demand for resources and the ever-increasing emissions of pollutants and waste.

Despite the financial crisis, liberalization is still the prevailing trend in the global economy. In the present decade, we cannot expect any strong global tendencies pushing for a change in the opposite direction. That trend may be expected to continue also in the longer perspective. This means that the current models of economic development based on the growth in GDP will be maintained. That trend is against the concept of sustainable development, which calls for the dematerialization of consumption. Many researchers focusing on sustainable development do not criticize capitalism as a market system as such, but they want to restore the fundamental principles of capitalism underlying the classical economic theory, which also include the social and ethical contexts, as the indispensable elements for the functioning of capitalism to the benefit of the entire society. As J. Ikerd points out, sustainable development will depend on the awareness that the world is a single ecosystem of which we, humans, are an integral part (Ikerd, 2008).

The qualitative changes pose new challenges also in the institutional dimension, which require measures necessary for the adjustment to the reality and the specific nature of international relations, with a view to guaranteeing proper conditions for sustainable development. At the same time, we should point out that the goal of the economic activity or competition between individual players in the global economy has not changed in itself, that goal still being to ensure growth, social welfare, or the broadly defined

quality of life. What has changed significantly, and will continue to change very dynamically, is the environment in which we are working to achieve that goal: from the family, social group, or nation, to the international or regional dimension, the entire global economic system, up to the universe as a whole (Nawrot, 2012a).

In this context, the United Nations Conference on Sustainable Development in Rio de Janeiro can be considered a breakthrough in the history of mankind, because it sanctioned the very concept of sustainable development (Pawłowski, 2009); at the same time, it is noted that measures must be taken not only in the economic dimension, but also in the social, environmental, or ethical dimension within which sustainable development is analyzed (Rydzewski, 2012; Pawłowski, 2009).

The increasing role of interdependencies and cooperation on the one hand, combined with the ever-increasing number and changing importance of players in international relations on the other hand, require new forms of collaboration and cooperation not only between countries, but also between other stakeholders in international relations. In addition to the state and the market, new entities are now actively participating in the development of the international institutional order. Those entities include enterprises, trans-national corporations, NGOs, national, regional and transnational expert bodies, organizations for regional cooperation and integration, or international and transnational cooperation networks. What must be noted is the changing role of the state as the dominant entity in international relations, and an alarming gap in the ability to take effective measures in the reality we live in. At the same time, there is certain reluctance to delegate the decision-making powers and privileges to regional or global institutions, for fear of losing sovereignty or surrendering a part of it. What is obvious is the lack of new, substitute mechanisms. In the light of the civilizational megatrends and the related challenges, despite the fears that the national economies might lose their sovereignty, the need for further institutionalization of the world's economic system is beyond any doubt, as this will prevent the social, economic, and environmental degradation. However, this process seems to be too complex to expect that global institutions able to achieve the objectives of *global governance* will emerge in less than twenty years. The failure of the Rio+20 conference of June 2012 is a good example. Expectations were high, but the conference failed to reach agreement as to the establishment of a permanent body for the environment and sustainable development within the structures of the United Nations.

We can therefore expect that states, as sovereign entities functioning as permanent elements of the global structure, with their economic authorities elected on a more or less democratic basis, will still offer the main institutional framework within which other entities will organize themselves (Kleer, 2012;

Misala, 2009). This seems reasonable, because states are more capable of preventing internal and external disturbances (or shocks). The specific nature of today's global economy also justifies the activity within a group of states, both in the form of regional integration groups and supra-regional or global structures, provided that the interests of the majority of citizens of those states are as close as possible and the domination of the stronger over the weaker is eliminated to the greatest extent possible (Misala, 2009; Nawrot, 2012a).

In the global economy, the broadly defined instrumental and institutional conditions will therefore play a key role at the following levels:

- the global level,
- the regional level,
- the national economy level.

In those three dimensions, system-based solutions will interact with one another. However, the competition between national economies may pose a threat to the creation and functioning of the effective cooperation structures, because the entities operating in individual economic subsystems will strive to gain a competitive edge.

In that context, activities of the players in the global economy should lead to the achievement of sustainable development, treated as the overriding objective and the common interest of all citizens. The achievement of that objective in the context of institutional changes, and at the same time the ability to cope with the ongoing changes, to meet the challenges, and to eliminate the threats, will require multi-lateral involvement and good management of cooperation at different levels (Ocampo, 2010; Nawrot, 2012b).

Management of the emerging interdependencies will consist in the effective governance of the cooperation networks in all the three dimensions listed above. This applies equally to the national or regional dimension and to *global governance*, which assumes the management of the global cooperation network. In addition, the public and private dimension must be taken into account, and different entities sharing the same values must cooperate and form partnerships. And lastly, multilateralism will require equal involvement of the individual entities operating in the global economic system. This applies in particular to the spatial dimension, where the activities of the EU and the USA must be complemented with the involvement of countries from the Asia-Pacific region (such as China, India, and certain ASEAN+ countries), and also other emerging markets from Latin America and Africa.

In the emerging network of bilateral and multilateral relations, arising from the participation in a number of regional, interregional, and transnational structures of different types, there are certain functions, tasks, or governance activities that will overlap or exclude one another; therefore, there is an urgent need to ensure coordination, both regionally and globally (Nawrot, 2012c).

Delegating certain powers and responsibilities to regional and global institutions cannot be avoided. In addition, there is also an urgent need to develop the optimum system of collaboration and cooperation, as well as the mutual relations and interdependencies among regional and global institutions, and to involve less developed regions in order to reduce the disparities between growth centers and remote regions and to eliminate the existing asymmetries. More effective *regional governance* will determine the quality of governance at the global level, and the existing gap between ongoing processes and the current adjustment, supervisory, or control mechanisms will require coordinated efforts and compatibility of the regional policy and *global governance* (Nawrot, 2012c; Nawrot, 2012d).

The new economic and political reality will require cooperation at the supra-regional level with a view to:

- stabilizing financial markets,
- achieving macroeconomic stability,
- financing development, including in relation to the social dimension, infrastructure, energy, and the environment,
- protecting the environment,
- managing the disaster risk,
- cooperating at the level of research centers, such as institutes, think-tanks, and universities.

The coordinated activity in the above areas will foster sustainable development, and the experience of countries affected by the financial crisis of the first decade of the twenty-first century shows that instability in one area will undermine all three dimensions of sustainable development: economic, social, and environmental (Akyüz, 2012).

The environment

Environmental aspects are among the most significant aspects in the long-terms analysis of civilizational development. The problem of limits to growth, which result from the scarcity of resources, was analyzed by many researchers (Meadows at. al., 1972; Turner, 2008; Randers, 2012). Three main threats related to the natural environment may be determined on that basis. These include: climate changes, loss of biodiversity, and inefficient use of natural resources. However, that list is not exhaustive, because in many cases other threats can be highlighted – for instance, interference with the global nitrogen cycle, ocean acidification, etc. (Rockström at. al., 2009).

According to the media, climate change is the single most important environmental problem. Considering the high degree of complexity and interactions between different variables, any forecasts in that area are highly uncertain. Based on the available data we can expect global warming caused by the rising greenhouse gas emissions in the future. The expected

rise in temperature will affect different areas to a different extent; as a result, certain societies will see it as a major problem, while others will welcome it as an opportunity for growth (Starkel, Kundzewicz, 2008). Most states and international organizations emphasize the need to fight climate changes in their official positions. However, the effects of measures taken to date are not too optimistic. This applies in particular to the failure of negotiations between parties of the climate convention with respect to the limits on greenhouse gas emissions after 2012. Global initiatives can be expected after 2020 at the earliest, which means that we have lost an entire decade. As the global financial crisis is spreading and greenhouse gas emissions are rising, we should not expect any reduction in the level of greenhouse gas pollution by 2030. This will further accelerate the above-mentioned changes, making it difficult to achieve the adopted objectives. Because climate changes are gradual, rather than being a sudden disaster, we can expect that a large group of stakeholders will still oppose any climate initiatives in 2030. As a result, it is difficult to predict any climate initiatives in the longer run.

The loss of biodiversity does not attract so much attention as climate change, but the rate of extinction of many species is appalling. It is claimed that what we are witnessing right now is nothing less than the sixth global extinction event. Unlike the previous mass extinctions, which were due to natural causes, the present extinction event is entirely man-made (Kozłowski, 2005). The present-day political and economic decisions do not offer a global solution to that problem. Even on a regional scale, where the environmental awareness is high (e.g. in the European Union), we cannot expect that those processes will be stopped. It seems that we will need a major damage with a direct impact on humans to finally realize that action is necessary. But the loss of biodiversity is an *invisible* process, making it difficult to highlight its effects. We can assume that the problem will deteriorate until 2050, but decisive measures for the protection of species will only be taken in the last decade of that period. This means that we can expect a serious depletion of plant and animal life, and the effects of that process are difficult to predict. It results from the tendency to classify species in terms of their usefulness for humans. However, such an approach is misleading, because the extinction of species that are considered *useless* may trigger the degradation of entire ecosystems and the subsequent extinction of the *useful* species.

Protection of biodiversity is discussed separately, but it is part of a broader notion of resource management. The business world usually focuses on the access to non-renewable resources, but renewables also deserve more attention (Nawrot, 2012e). In this area, three specific aspects can be discussed: the management of water, forests, and food supplies.

By 2050, we should expect no major changes in forest management. The current policy will probably be maintained, which means that no binding international agreements on the standards and levels of protection of forest ecosystems are to be expected any time soon. Considering the importance of forest resources for the global economy, the current trends in forest management are likely to continue. As a result, only Europe will see the further enlargement of its forest area, while in other continents the rate of deforestation (especially with respect to rainforests) will increase (Hayden, 2009). Until 2030, societies should not experience any negative effects of that policy, and only environmentalists will draw our attention to the scale of losses caused by the mass deforestation of rich ecosystems. It will also further reduce the world's biodiversity.

Many organizations are warning against the risk of insufficient food supply. The expected population growth, especially in poor countries, may lead to rapid expansion of high-poverty areas. In some parts of the world, for instance in China, those areas may be reduced locally. However, we can generally expect that on the global scale the number of people with limited access to food supplies is likely to increase. The main reason for that situation is not our inability to produce sufficient amounts of food, but rather the inefficient food distribution processes. The growing obesity epidemic in highly developed countries, where spending on food is not a major part of a household budget, and the scale on which food is wasted, only confirm that statement (Nazaruk, 2012). On the other hand, people in poor countries cannot afford to buy food at global prices, which reflect the reality of developed markets. It seems that this trend will continue, because we see no prospects for the development and application of new, more efficient food distribution processes.

Water management appears to be the biggest challenge for the future. Water pollution and the ever-growing problems with access to water (also caused by climate change) will be felt most sharply. Its impact will be gradual, but the rate of this process will still be the most dynamic of all the above processes. Its consequences are also most severe, because they will pose an immediate threat to human life.

According to the most recent estimates of the OECD, the mid-century will see a rise in demand for water by 55 percent compared to 2000. That increase will affect mainly the goods production sector (up by 400 percent), the energy sector (up by 140 percent), and the household sector (up by 130 percent). In addition, a major part of the world's population will still have problems with access to water and sanitation (Leflaive, 2012). It is not only physical access to water that is taken into account, but also the so-called *water poverty*, i.e. the technical and financial problems related to the extraction, transport, and distribution of water (*Access to Water in Developing*

Countries, 2002). Forecasts presented by The Millennium Project are much less optimistic, assuming that even half of the world's population could live in water-stressed areas (*Global Challenges Facing Humanity*, 2011).

Compared with the above problems, the aspects related to the depletion of non-renewable resources seem much more obvious. It is only logical that the use of the existing resources has its limits. Still, not many people are aware of the consequences of this process. Estimating the accessibility of specific resources involves a high risk of error, because it is not possible to determine, in a reliable manner, the size of currently available resources and to predict the size of resources that still remain to be discovered. As a result, the predictions relating to the depletion of those resources should be treated only as warnings, not as fixed dates.

Among non-renewables, energy raw materials (in particular crude oil and gas) are given primary attention. However, the focus needs to be shifted to other resources, mainly to rare earth elements. The estimated time limits for their availability are much shorter than for primary energy sources. In 2010, the availability of crude oil resources was estimated at over 46 years (BP, 2011). Estimates for other raw materials are much less optimistic (for instance, 9 years for silver or 13 years for zinc). Obviously, those estimates are not precise and vary greatly depending on the study. Therefore, they should be treated only as warnings. In practice, those studies do not include many less-known deposits, because there are no technologies currently available for their production on an industrial scale. This applies in particular to deposits located at great depths and in Arctic regions. However, the risk of depletion of some of those raw materials by 2050 is still very high. On top of that, most of them are indispensable for the proper functioning of electronic devices; this raises additional concerns. Most of them do not have any known substitutes and we do not know how to produce them in laboratory conditions. Therefore, the management of those resources should be given the highest priority. And there is one other source of concerns: it is the fact that 97 percent of the world's rare earth mineral trade is controlled by one country, China.

Concluding remarks

Without any doubt, the twenty-first century will differ greatly from the preceding centuries. With the scale and rapidity of the changes to come, the world in the future will bear little resemblance to the past. What will be important is the quality of those changes, based to a large extent on the life and work in cities, especially in megacities or metropolises. In addition, with a dense network of air and maritime transport links (as well as road and rail connections), both passengers and cargo will be moving very fast.

That progress will be based to a large extent on the latest Internet solutions, which will be related to the intensive digitalization of production.

The objective of sustainable development is to create such civilizational changes as to ensure that mankind can develop safely in the long run. This is of particular importance if we consider the environmental aspect, where the limits of the Earth's capacity are put into spotlight.

However, most consumers are so detached from the environment that they hardly even notice that every product is based on the use of raw materials. In the global economy, there is a conviction that there will always be someone in the world who is interested in the sale of certain goods, and so the market economy will continue to thrive. That trend leads to the rapid increase in consumption.

The growing demand for goods and services is a consequence of a number of mutually reinforcing factors. First of all, the world's population will continue to grow, exceeding 9 billion people by 2050. This means an increase by nearly 30 percent. Every new inhabitant of the Earth will need to satisfy at least his or her basic needs, which will have a considerable impact on the food supply, water resources, and the Earth's surface. Secondly, the increasing urbanization will put even more pressure on the environment. We can expect a further increase in air pollution (especially through greenhouse gas emissions) caused by the industry, the energy sector, and transport (mainly road and air transport) (Prandecki, 2010). We should also remember about additional difficulties, such as removal of waste in cities or commuting problems (rush-hour traffic jams). The supply of clean water to inhabitants and treatment of wastewater will also be the key factors.

The second factor of strategic importance for the proper functioning of cities will be the supply of electricity at affordable prices, which is necessary to maintain all life-supporting and occupational functions of the inhabitants. As the population grows, the demand for electricity in cities will also increase (Prandecki, 2011b).

And thirdly, the development of cities will further strengthen the consumption-based lifestyle, which results from the faster pace of life and more shallow contacts between people, who will be driven mainly by the desire to possess more.

All the above factors will increase the demand for goods and services. Those trends are expected to slow down only in the second half of the analyzed period. However, even at the regional level it is difficult to predict the functioning of sustainable areas. The planned transition to low-emission economies by 2050, e.g. in the EU and in China, may be considered a step in that direction. However, this will solve only part of the problems in the context of sustainable development. Since the adaptation of the institutional framework to the present reality is too slow, we should not expect any major changes in that area,

even despite such planned measures. Still, it is worth pointing out that a comprehensive institutional change could be one of the key drivers of sustainable development.

The idea of a network society is one factor that could reduce consumption and undermine the policy based on economic growth. The ongoing changes, especially those fostering the exchange of information and the involvement of individuals in public life, will lead to increased environmental awareness. However, this process will not be dynamic, because there are no clear indications that we are reaching any limits. The depletion of natural resources will be a slow and *invisible* process. It will only manifest itself in the rising prices of raw materials and finished goods. In many cases, it will not be associated with any environmental limits. Most probably, economic processes could be compared in the future to the current loss of biodiversity, which usually goes unnoticed for a long time, and warnings from experts are ignored by the society. Despite the difficulties in taking coordinated measures, both at a regional and global level, and very limited prospects for the establishment of a sustainable development institution meeting the *global governance* objectives in the nearest future, such efforts should be made.

In conclusion, the main idea of sustainable development should be the reduction of consumption (at least of material goods). This, however, is a long-term objective. For an average inhabitant of the Earth, the time-frame of several decades is too long; it is very unlikely that an average person would be willing to give up the satisfaction resulting from the use of the available resources for the sake of some future, uncertain benefits (Prandecki, 2011c). In addition, there are no clear and widely accepted quantitative methods for the evaluation whether or not a given initiative is consistent with the underlying concept (Russell, 2010). Megatrends analyzed based on the current behavior patterns indicate that the development of mankind goes in the opposite direction than the concept of sustainable development. Therefore, efforts focusing on the achievement of sustainable development should take into account the lack of public interest in taking real action. It seems that the only solution is a wide-ranging educational initiative, highlighting the need to promote the positive values (such as the common good) in the triangle economy-society-environment (Borys, 2010).

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The rights of local communities and their role in the sustainable exploitation of biodiversity

Prawa społeczności lokalnych i ich rola w zrównoważonym wykorzystaniu różnorodności biologicznej

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Abstract

Good governance is central to sustainable development. As the age-old maxim goes, *As the King, so are the subjects*. Demonstrated commitment and integrity on the part of the governing bodies in villages, towns, cities, provinces and countries, is a *sine qua non*, if the subjects/citizens/denizens need to be motivated to cooperate in the pursuit of sustainable development. The governing bodies, needless to say, cannot adopt a *one-size-fits-all approach* while dealing with human beings who have elected them to power. This article seeks inspiration from ancient Indian history. To be more specific, from the treatise – Arthashastra (Statecraft, in Sanskrit) written by Chanakya, the adviser to the first Maurya Emperor Chandragupta who reigned between 340 BC and 293 BC. The four-fold path suggested includes *Saam* (gentle exhortation), *Daam* (providing incentives), *Dand* (penalizing, levying fines) and *Bhed* (discriminating and imposing sanctions), in that order of preference.

Key words: governance, sustainable development, *Saam*, *Daam*, *Dand*, *Bhed*

Streszczenie

Dobre zarządzanie to w kontekście rozwoju zrównoważonego kwestia kluczowa. Jak mówi stare przysłowie: *Jaki pan, taki kram*. Wykazanie prawości i zaangażowania przez organy zarządzające we wsiach, miastach, prowincjach, i krajach jest niezbędne, jeśli podmioty/mieszkańcy/obywatele mają włączyć się do współpracy na rzecz zrównoważonego rozwoju. Należy dodać, że organy zarządzające w kontekście problemów lokalnych społeczności, które reprezentują, nie dysponują uniwersalnym rozwiązaniem pasującym do wszystkich sytuacji. W tym artykule poszukujemy inspiracji do działania wywodzącej się z ważnego w historii Hindusów traktatu Arthashastra, będącego dziełem doradcy cesarza Chandragupty (jego rządy przypadały na lata 340 – 293 przed Chrystusem). Przedstawiono tam poczwórną ścieżkę odnoszącą się do zarządzania, uwzględniającą w kolejności: *Saam* (delikatne namomnienie), *Daam* (dostarczanie zachęt), *Dand* (karamie, nakładanie grzywien i *Bhed* (nałożenie sankcji)

Słowa kluczowe: zarządzanie, rozwój zrównoważony, *Saam*, *Daam*, *Dand*, *Bhed*

Introduction and background

In Venkatesh (2010), the author had mapped holistic individual development to global sustainable development (Sanchez, 2008); and arguing on the premise that *parts make up the whole*, had urged individuals to embark on the path of personal development – physical, mental/emotional and spir-

itual. This, the author had stated, would translate slowly but surely into global economic growth, social progress and environmental upkeep; the so-called triple bottom line of sustainable development into the future. In Venkatesh (2012), the author had pointed out that the *lubrication of law/policies/governance* from time to time was mandatory to keep the gears of sustainable devel-

opment rotating. The thought-word-action, ideas-policies-practice and academics-government-industry/society nexus was also described in detail in the said paper. The first paper adopts a philosophical approach to motivate individuals to take charge and realise that each one of them can contribute to sustainable development, by first attempting to understand that every individual personality is but a miniature version of the macrocosm. The second one is a more practical analysis of the status-quo in modern-day society, and stresses on the need for collaboration and cooperation among laypersons, institutions, centres of learning, governing bodies, enterprises and firms, to clear the road-blocks on the path to sustainable development.

Beginning from a mechanistic understanding of human beings and the passions, Hobbes postulated in his *Leviathan* what would be like without government, a condition which he called the State of Nature. In that state, each person, according to Hobbes, would have a right, or license, to everything in the world. This, Hobbes argued, would lead to a *war of all against all*. He believed thereby that people need to be controlled. There is a middle path between the trusting appeal made in Venkatesh (2010) and the command-and-control advocated by Hobbes. One cannot certainly wish away the role of governments and trust all individuals to embark on the path deemed to be most suitable for the welfare of humanity as a whole, but at the same time, it would be demeaning to the educated, aware and enlightened populace if governments tarred everyone with the same brush.

It is here that Chanakya's Arthashastra comes in handy. Chanakya who lived in the 4th century BC, was an adviser and prime minister to the first Maurya Emperor Chandragupta (c. 340-293 BCE), and was the chief architect of his rise to power. Chanakya has been considered as the pioneer of the field of economics and political science; globally. He believed in four approaches to governance – *Saam, Daam, Dand, Bhed* (Sanskrit words); which can for the purpose of this paper be loosely translated into *Pacifying/Appealing, Providing incentives, Punishing/penalizing* and *Discriminating* respectively. In this article, hereafter, the shorter Sanskrit terms will be used. These four approaches have been, are and will continue to be valid for governing bodies around the world, be they at continental (supranational), national, provincial or municipal levels.

Mixed, not fixed

It must be mentioned here that *one size does not fit all*. Human beings are so different from one another – physically, mentally/emotionally and intellectually. The degrees of development on these different levels are varied. Hence, a fixed approach on the part of the governing bodies will not be effective

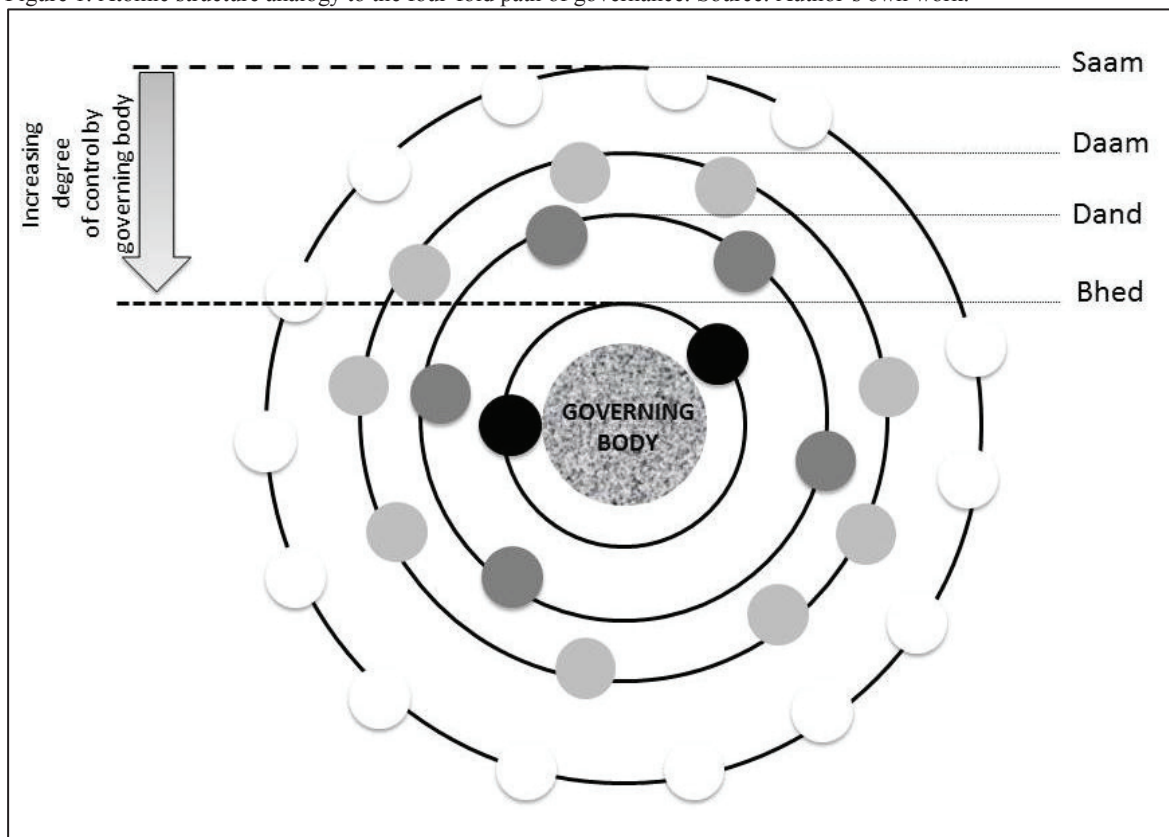
enough. While *Saam, Daam, Dand* and *Bhed*, will all necessarily have to be enforced to different degrees to govern the population of a city or town, the progression preferably must be from the exercise of soft power towards the use of a command-and-control approach. In other words, one ought to start by assuming that all people respond favourably to gentle exhortation, polite requests and rhetorical explanations – *Saam*, in other words. The equivalent of *firing a shot in the air* to disperse an unruly mob, if one may say so. It should not however come as a surprise if a large percentage of the population addressed does not heed to the requests. This is just the start – a kind of a screening process, which separates the wheat from the chaff so to say. It uncovers the *wheat* component of the population – in other words, the extent of ready cooperation and total support the governing body can tap into, in the pursuit of its sustainable development goals (Redclift, 2009). This fraction, thus, has been won over by adopting the strategy of *Saam* – peaceful dialogue in which the governing body respects its subjects as equals and upholds their dignity as thinking and conscientious human beings. *Saam* thus is effective when the governing body interacts with selfless, spiritually-inclined people who are unflinching in their commitment to sustainable development. It is easier to influence and solicit the cooperation of this part of the population (Kras, 2011).

Figure 1 is a loose analogy to the atomic structure, with the Governing Body represented by the nucleus, and the people governed floating around in the (electronic) orbits. The orbit furthest from the nucleus is the *Saam* orbit, the one immediately below it is the *Daam* orbit, followed by *Dand* and *Bhed*. The degree of control (analogously the attraction between the protons in the nucleus and the electrons in the orbits) exercised by the governing body decreases with distance from the nucleus.

After *Saam*, the governing body needs to exercise *Daam* – providing incentives to win over those who are self-serving and skeptical. These need not necessarily be monetary incentives, but essentially a kind of a *give and take*. The *quid pro quo* here is necessary to make these people aware of the value of what there are being asked to do, not do, or sacrifice, for the welfare of humanity as a whole. Unlike the *Saam* orbit dwellers who cooperate of their own will, out of love for mankind, and a sense of purpose which transcends their personal interests and those of their near and dear ones; the *Daam*-orbit dwellers need to be coaxed with concrete material benefits. The challenge here is to determine the duration over which these benefits would be sustained by the governing body, lest the *Daam*-orbiters lapse into non-cooperation.

However, there is a distinct possibility that those among the *Daam*-orbiters who fall in the thin transition zone between the *Saam* and *Daam* orbits may

Figure 1. Atomic structure analogy to the four-fold path of governance. Source: Author's own work.



be inspired by those in the *Saam*-orbit to escape and evolve upwards.

Those who do not respond positively to both *Saam* and *Daam*, would have to be penalized. These belong to the *Dand*-orbit. The governing body is endowed with the power to exercise this hard power over its subjects when the cause justifies it. However, this is the third preference – after having exhausted the potentials of *Saam* and *Daam*. *Dand* is not corporeal punishment necessarily, but levies, taxes and fines for undesirable, unsustainable behaviour. Again, quite like in the case of *Daam*, the governing body needs to be persistent with the penalties. There are cases when penalties are enforced and they vanish after a while, owing to lack of dedicated implementation, corruption and lassitude on the part of the officials entrusted with the task. However, there are exemplars like Singapore, which stand out as beacons to interested emulators – *Singapore is a fine country* is a witty catchphrase which one finds on T-shirts sold in the country!

Consistent imposition of penalties may push some of the *Dand*-orbiters into the *Daam*-orbit, once they realise that it would be much better to yield a little and gain, than be stubborn and lose. This is good enough, as a first step. However, the governing body also needs to assess whether applying *Daam* for a long time to a greater and greater fraction of the population would be economically feasible. If

yes, then, this is the best thing that could happen! However, if not, the *Daam* has to be withdrawn, forcing the *Daam*-orbiters to think in terms of entering the *Saam*-orbit. Coercion, one may say....but then, there were many shots fired into the air, right? It is high time...

The most intransigent members of the population would refuse to yield even to *Dand*. Their ascent to *Daam* and ultimately to *Saam* could be brought about by *Bhed*. The literal meaning of the term – *Bhed* – is discrimination. Chanakya used it to mean *Sowing seeds of dissension*. However, for the purpose of modern-day governance and in the context of sustainable development pursuits, we could interpret the same as *sanctions imposed against the recalcitrant wrong-doer*. However, governing bodies are not out to harass the *Bhed*-orbiters. A well-meaning governing body having the support of most of the population in the city (those in the *Saam* and *Daam* belts), may even do so, for that matter. We are however not necessarily advocating a stoppage of essential services here. A general denouncement of such individuals and propaganda among the denizens of the city that these are the *black sheep* who need to be proselytized into sustainable development supporters, would help. It will not be long before these *black sheep* become wise enough to voluntarily ascend the ladder.

Governance is key

Governance thus is essentially being kind to the good and stern with the not-so-good. (*bad* is a derogatory term). The author is reminded of the Hindu God of sustenance – Lord Vishnu – who is depicted in paintings and sculptures carrying four objects in his four hands. A discus (*Bhed*), a mace (*Dand*), a conch (*Daam*) and a lotus (*Saam*). Administrators too can learn a lot from mythology, if they approach it with their eyes and ears open! Good, committed and responsible governance is a key to sustainable development.

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Strategies Against Technological Exclusion. The Contribution of the Sustainable Development Concept to the Process of Economic Inclusion of Developing Countries

Strategie przeciwko ekskluzji technologicznej. Wkład idei zrównoważonego rozwoju w proces inkluzji ekonomicznej państw rozwijających się

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Abstract

The article is on the technological dimension of exclusion, which concerns the states underprivileged in transnational economic processes, phenomenon, which is of crucial importance for development and growth. The article deals with the consequences of unbridled economic growth, unequal access to technological progress, in the context of the current paradigm of sustainable development.

Nowadays, developing countries lack the capacity to access and utilize the newest advances in science and technology. Technology, as crucial contribution to the sustainable development, needs to be the poor and nature oriented. Its diffusion, production, adaptation and usage should be universal in order to provide social inclusion and enhancement of the economically excluded nations.

The author aims to present theoretical models of economic growth, sustainable development strategies of developed and highly developed countries, as well as the strategies implemented in order to prevent developing countries from the technological, and hence economic exclusion.

Key words: sustainable development, transnational capital, technology transfer, exclusion, economic growth

Streszczenie

Niniejszy artykuł traktuje o technologicznym wymiarze ekskluzji państw poszkodowanych w transnarodowych procesach gospodarczych, które to zjawisko ma współcześnie decydujące znaczenie dla rozwoju i wzrostu gospodarczego. Opracowanie przedstawia konsekwencje niepożądanego wzrostu gospodarczego, nierównego dostępu do osiągnięć rozwoju technologicznego, w kontekście aktualnie obowiązującego paradygmatu zrównoważonego rozwoju.

Współcześnie kraje rozwijające się nie mają możliwości zastosowania najnowszych zdobyczy nauki i technologii. Technologie, jako kluczowe dla zrównoważonego rozwoju, winny być zorientowane na środowisko naturalne i zjawisko ubóstwa. Ich dyfuzja, produkcja, adaptacja i stosowanie powinny mieć zasięg ogólnosiwiatowy, by zapewnić społeczną inkluzję oraz wzmocnienie ekonomiczne wykluczonych narodów.

Celem artykułu jest prezentacja teoretycznych modeli wzrostu gospodarczego, strategii zrównoważonego rozwoju państw rozwiniętych i wysokorozwiniętych oraz strategii stosowanych by uchronić kraje rozwijające się przed technologicznym, a co za tym idzie ekonomicznym wykluczeniem.

Słowa kluczowe: zrównoważony rozwój, kapitał transnarodowy, transfer technologii, ekskluzja, wzrost gospodarczy

Introduction

Governance for sustainability presents an enormous but unavoidable challenge. For progress towards sustainability, the governance structures and practices must be established, which would coordinate all the *sustainable* works. Special attention should be paid to the contexts of every complex issue and the uncertainties, which may occur during the process.

The basis of the structural changes taking place in modern national economies is the change of existing models of capitalism. The idea, on which the global economy was supposed to be based on after the Second World War, was the concept of social market economy. In fact, speculative capital based on shareholder value began to dominate. An antidote to the neo-liberal market fundamentalism could become the concept of sustainability, which refers to the principle of intergenerational equity and justice, principles of prevention, law of nature, harmony with environment and principles of social and lawful democracy (Kośmicki, 2010).

Pathologies of the contemporary process of capital accumulation include the phenomenon of fraud and looting, which are infamous work of transnational corporations, bringing high profile cases to the bankruptcy of national firms: tax avoidance, as well as the expansion of capitalist property (mainly due to patent activity) on the nature and knowledge. Moreover, as notes the creator of the typology of taking over the global economy, Christian Zeller (2008), accumulation is permanent, hence, the existing, usurped areas are not a limited set and we should expect more takeovers along with the course of historical process.

The liberalization and open economy for *systemically closed* countries should mean strengthening the export share, exploring new markets, technological cooperation, that is actions that would lead to economic growth. The key consequence of the rapid process of liberalization and excessive opening has been overlooked: pathologically imperfect competition. Developing countries such as Argentina, Peru and Poland were told, that even limited control and state intervention argue with the idea of economic freedom. In return, the nation-states societies were advised to implement the concept of minimum, promised a simultaneous rapid liberalization and stabilization, which, as it turned out, leveled structure of many national economies, leaving no illusions of a quick restaurant. Washington Consensus (or dictate, if you prefer) takes into account neither the social responsibility, nor sustainability in development of the capitalist system (progressive accumulation of capital).

According to Lucjan Pawłowski (2012):

Free movement of capital and goods across borders required the liberalization of all the markets in order to minimize the role of the states, which are capable

of effective control, protecting workers and the environment on their territory.

This article deals with the consequences of unbridled economic growth, unequal access to technological progress in the context of the current paradigm of sustainable development. This article aims to present theoretical models of economic growth, sustainable development strategies of developed and highly developed countries and the strategies implemented in order to prevent the phenomenon of economic exclusion of developing countries.

The idea of sustainable development

The concept of sustainable development was first comprehensively described in the report *Our Common Future* (1987), developed by the United Nations World Commission on Environment and Development. Sustainable development was defined as a process aimed at meeting the development aspirations of the present generation in the manner, that the same aspirations would be possible to fulfill for the future generations.

Sustainable development is usually defined as an integrated concept of assuming equivalence of three aspects: environment, economy and society. While the first two dimensions are clarified for a long time, the social aspect remains indeterminate. The first attempt to change this situation was taken in 1994 by Study Commission *Man and Environment Protection* of the twelfth office of the German parliament. Planes, which were then separated form the basis for the social aspect of durability, are:

- health protection,
- ensuring social stability,
- providing opportunities for development and functioning of society (Heins, 1988).

Goals of sustainable development, which are supposed to ensure a dignified life, are to be achieved through correlation with the mechanisms of corporate social responsibility:

1. Environmental objectives: protecting the Earth's atmosphere, natural resources (consumption rate and the rate of regeneration), human health (effects of harmful substances, noise, etc.).
2. Economic objectives: full employment at acceptable quality of work, adequate income and economic development within the natural space, price stability.
3. Socio-cultural objectives: social security, social inclusion and equitable life chances, quality of life and health (Rogall, 2009).

The idea of sustainable development to the greatest extent was popularized in regard to the relationship: economic development – the natural environment. But, nevertheless, an important consideration is to retain the balance between the rate of development and broadly-defined socio-economic environment of

a man, which consists not only of the natural environment, but also working environment, the scale of direct investment, capital resources, etc.

Sustainable development is pursued in a world of multi-dimensional, intersecting and dynamic complex systems. We cannot expect to describe them fully, much less predict future effects. We may lack even suggestive evidence about many emerging problems, whose influences will ripple unpredictably through complex socio-ecological systems. Sustainability calls for prudence and adaptability, preferring safe-fail over fail-safe technologies, seeking broadly comprehensible options rather than those that are dependent on specialized expertise, ensuring the availability and practicality of backup alternatives, and establishing mechanisms for effective monitoring and response (Gibson, 2001).

Current resource-intensive development patterns are ecologically and ultimately, economically unsustainable. There are also problems of inadequate worker and consumer protection, poverty and exclusion. While modern economic advances have brought a host of value improvements, including important environmental quality gains, few of the gains have been automatic and the overall results still include persistent development failures and deepening ecological decline (Kemp, Parto, Gibson, 2005).

As it has been noted above in the discussion of sustainability and its implications, prospects for progress would be much enhanced by the availability of explicit rules and procedures for trade-offs and compromises. Examples of such rules include (Gibson, 2001):

- compensation for negative effects (where these cannot be fully mitigated): e.g., rehabilitation of aggregate mining operations on degraded agricultural lands;
- net gain and loss calculations involving: weighing major damages to the interests of tribal people displaced by a new dam against more material security for larger numbers of poor farmers downstream (differences in place), weighing efficiency gains from industrial process improvements balanced against associated job losses.

Sumner (2008) suggests, that sustainability involves a set of structures and processes that build the civil commons. From this basic understanding of sustainability, values within the society play an important role. Civil commons is based on values that promote life first and foremost. That means: co-operative, rather than competitive approach; a human construct, not a naturally occurring phenomenon, by definition, built by human agency.

Contemporary research on sustainable development can be divided into three parts: ethical and philosophical perspective, ecological, social and economic perspective, as well as the technical, legal and political one (Pawłowski, 2011; Fiut, 2012). From

the political scientist's perspective, it is a surprising division (separation of the social and economic spheres from the political one), however, it is justified in terms of analytical aspects.

Sustainable development is based on principles of ethics, and thus it calls for a sense of personal responsibility and liability for the acts. The core values are: responsibility as well as, intra-and intergenerational justice. Another important principle is the principle of welfare, direct democracy, or rule of law, which shows the need for open dialogue and public participation. An unrealistic image of a man proposed by the traditional economics and accepted in numerous theories and research, is not acceptable any more. Balanced economy tends to abandon the concept of *homo economicus* and encourages the use of a real image of a man, which is consistent with the heterogeneous approach. The new idea of *homo co-operativus*, emphasizes the need to take personal action for sustainable development (Rogall, 2008).

F.J. Ayala-Carcedo stated, that economic growth precedes social development, after which, there is a possibility for sustainable development to occur. So, first countries seek to ensure the sustainable economic growth and social development progresses, care for welfare and life quality of the citizens, and the third step of development reflects the concern for natural environment. According to the author, developing countries do not participate in sustainable development and if they finally take into account social or environmental issues, they are still subordinated to economic goals (Ayala-Carcedo, Gonzáles-Barros, 2000).

Principles of sustainable development involve both: the ecological and the civilization aspects. This approach includes the process of searching, studying and creating new directions in the economic growth and it involves new technologies, social communication and new kinds of social practices, which are aimed at providing people with proper living standards, as well as limiting the activities, that are harmful for the natural environment and human being. The idea of sustainable development is also becoming a scientific and technological endeavor that, according to the Initiative on Science and Technology for Sustainable Development (2006), *seeks to enhance the contribution of knowledge to environmentally sustainable human development around the world.*

Technological and economic exclusion

Social exclusion, whose main cause remains the economic status, gained another dimension. In conditions of globalization, we can talk about economic exclusion, which consists, inter alia, of technological exclusion, concerning both: individual units in the society (the situation is caused by bar of access to education or the means to purchase technological

equipment), as well as whole societies and this is particularly hazardous.

Technological exclusion of a state means the inability to develop or gain access to the newest technology. It is a condition in which *capital is needed in order to replicate it, the need for prior knowledge to assimilate some new, skills are needed to gain new skills and a certain level of development is essential to make further development possible* (Perez, Soete, 1988).

The nature of the dynamics of technological development and growth is as follows: the more technologically advanced countries get richer and increase the distance to those which do not have access to new technologies. Only a small number of developed countries may allocate sufficient funds for research and development. For the less developed countries, there is only one option left: obtaining access. Although the attraction of foreign direct investment did not cause major problems today, the problem is to persuade the investors to leave the technologies in the country of investment. Host countries have to learn to put tough conditions concerning technology transfer and its licensing.

The endogenous models, which are an attempt of interpretation of economic growth diversification, rejected the assumption of full accessibility to technology for all countries. In these models, there are various combinations of the production function formation, which depends on knowledge – measures aimed at the development sector may be characterized by increasing, decreasing or fixed income relative to the scale. The described approach takes into account the rate of diffusion of technological progress on an international scale, the costs of imitation, the ability to adapt new techniques of production in individual countries, the scope for market failure, which constitutes an incentive for private investment in the creation of technological progress (Siwiński, 2005).

As it has already been demonstrated, technological progress is an essential component of sustainable development in the context of investment and capital balance. Technological status of developing countries depends mainly on the transfer of technologies implemented by transnational corporations. This transfer takes many forms: foreign direct investment, selling licenses to the specific technology, agreement on the knowledge transfer and technology services, providing expertise on specific products and services (Kotler, Jatusripitak, Maesincee, 1999).

Concept, which takes into account the diffusion of technological progress from the perspective of economic growth, is a model of R.J. Barro and X. Sala-i-Martin (2004). The model analyzes at least two countries, one of which, the highly developed, generates technological solutions, while the other imitates these solutions. Such an imitation also requires some financial effort, however, this is not to compare to expenditures for the creation of new technologies.

Therefore, the imitating country, impoverished, has the potential to grow faster than the country-innovator. The growth rate is the faster, the higher is the initial income gap between countries. In the long run, the growth rate get leveled, there are no differences between these countries any more, regardless of the savings rate and the difference in spending on research and development.

Another model of knowledge diffusion at the international level implies a positive effect of foreign trade on accumulation and diffusion of knowledge. The liberalization of exchange leads to an overall increase of knowledge, thus, is beneficial to the growth rate of national income by increasing the rate of accumulation of knowledge, ergo accelerating technological progress (Ben-David, Loewy, 2003).

The implementation of economic mechanisms, which, as expected, were supposed to fix the situation of these countries, failed. To these mechanisms were included: trade liberalization, deregulation, privatization and liberalization of financial markets. All were aimed at creating a reliable and predictable economic environment for private parties, price stability and overall macroeconomic stability.

John Dunning (1993) suggests policy options for the host state in order to increase the transfer of technology to the country:

- determining the initial conditions for technology transfer for new and / or current foreign investors (instead of hope that the investor voluntarily leave the technology in the host country);
- elimination of restrictions of the usage of technology provided by transnational corporations (rules concerning the application of technology imported by investors should be established and written in the contract before agreeing on the investment);
- reducing the amount of license fees for technology transfer;
- developing market structures, that are most conducive to the efficient inflow and dispersion of technology;
- imposing an obligation on transnational corporations for the staff trainings (the investor may, for example, propose a budget earmarked for staff training in using the new technologies);
- extension of incentives for the creation of research centers by TNCs in the host countries (creating a research center is the best proof, that the investor is planning to bond with the economy of the host state for longer and its activities is not focused only on raising the next market outlets);
- favorable tax incentives, that would stimulate research and development activities (only the involvement in research activities

may constitute justification for the introduction of tax breaks or other fiscal advantages for transnational capital).

The concept of monopolistic advantage shows clearly that the company is encouraged to foreign investments, when it has a specific advantage over competitors in foreign markets, advantage, which weakens the position of local firms (Rymarczyk, 2004). To the most important factors of competitive advantage towards the local companies belong: better management skills, marketing strategies, the usage of advanced technology, favorable financial links (Kowalski, 2004). In brief, the most important technological advantage is identified with knowledge. The knowledge of products, production processes, methods of organization and management, as well as marketing techniques.

Knowledge resources are not a subject of the internationalization processes. Due to the fact, that knowledge is a unique key element of competitive advantage over their competitors, corporations choose to internalize knowledge, which means that know-how diffusion is restricted mostly to the internal market for the company. The knowledge internalization refers to the practice of vertical integration, the acquisition by suppliers and customers (Rymarczyk, 2004).

Examples of inclusive strategies

Singapore, which is very often used as reference to the concepts of transferring advanced technologies, showed that the developing country may find its own way to acquire and implement technology. The government of Singapore used a selective approach and it has made extensive intervention in the development of industry – in the 1960s focusing on its labor-intensive industries and sectors with a higher share of capital and skills. Tax incentives for foreign investment were introduced – this is how Singapore attracted foreign investment, combining the local factors of production with foreign technical and managerial expertise.

One of the major manifestations of the new strategy was a radical shift in policy of wage setting. On the one hand, in order to reduce the attractiveness of investments in the areas of labor-intensive and low skilled, labor costs were increased and measures such as changes in tariffs or restrictions on importing labor from abroad were implemented. On the other hand, policy makers were actively supporting the process of moving operations of low cost labor to neighboring countries, in order to promote their industrial development and to ensure, that the producers in Singapore would have an access to cheap inputs. The government of Singapore has introduced a number of instruments of economic policy (generous tax and fiscal incentives), which purpose was to shift

investments towards a more capital-intensive, technologically advanced manufacturing (Dunning, 1993).

According to Eisuke Sakakibara, the cardinal error of the international financial institutions and private lenders is to use the same model for all developing economies: *to some extent, the emerging economies have accepted the dictates of dogmatic formulas because of fear of negative reaction from the market in case of rejection of these recommendations. In this sense, the Washington Consensus was not only a consensus in Washington, but it also represented the official position of the wealthiest countries of the G-7 and other member states of the IMF and the World Bank, both lenders and borrowers and the market participants* (Sakakibara, 2009).

Alice Amsden analyzing the different directions of economic development, stated, that the fastest growing economies in the last three decades – Japan, South Korea and Taiwan opted for economic policy diametrically opposite than recommended for the post-socialist Europe. Similarly, the reconstruction of Western Europe after World War II contained a large dose of public ownership, capital controls and other instruments of economic planning, which became the curse of the current prescriptions of the World Bank. Anglo-Saxon economies of the greatest enthusiasm for the complete cure in a cold bath – USA, United Kingdom – have undergone the same stagnation in relation to Western and Asian economies, which use a more interventionist state (Amsden, 1993).

The UNDP report (1999) concentrates on globalization, *with a human face*, which, according to the report, should be characterized by strong leadership at the global, regional, national and local level. Such solution would concentrate on the benefits of globalization, caring at the same time, for people and the environment. Globalization, according to the authors' rapport, should proceed on common values such as respect for life, liberty, equality, justice, tolerance, which are contained in the *UN Charter* and *Universal Declaration of Human Rights*. To implement the suggestions, UNDP has proposed an adoption of a program aimed at ensuring the comprehensive development of a man. To meet these requirements, the international community must take concrete actions, inter alia: strengthening the measures for human development and adapting them to new realities of the world economy; activities taken in order to minimize the risks of financial vulnerability of economies by eliminating financial instability and leading to greater transparency of international financial institutions; protection of natural environment; promoting human rights in transnational companies by creating codes of conduct (Human Development Report, 1999).

The *2011 Human Development Report* argues that the urgent global challenges of sustainability and equity must be incorporated to policies on the national and global level in order to get interlinked goals. The Report outlines great potential for positive synergies in the quest for greater equality and sustainability, especially at the national level. UNDP emphasizes the human right to a healthy environment, the importance of integrating social equity into environmental policies, and the critical importance of public participation and official accountability. The Report compares the concepts of sustainability and equity. The main issues are the adverse repercussions for human development of the lack of environmental sustainability, especially for those currently disadvantaged, and more positively, the intersections between greater sustainability and equity, as well as the potential for progressive reforms that promote both goals. In the authors' opinion, the ideas are similar in one fundamental sense: both are about distributive justice (Human Development Report, 2011). Much is expected from governance in context of sustainability strategies. According to the European Commission, good governance consists of openness and participation, accountability, effective coherence, efficiency and sensitivity to the immediate context that is promised by subsidiarity. For sustainability, other requirements include means of internalizing external costs and ensuring integration of policy considerations, evaluation of options and dealing with trade-offs.

Sustainable development and economic growth

Prosperity has vital social and psychological dimensions. To do well is in part about the ability to enjoy the respect of your peers, to contribute useful work, and to have a sense of belonging and trust in the community. In short, an important component of prosperity is the ability to participate meaningfully in the life of society. This view of prosperity has much in common with Amartya Sen's vision of development as *capabilities for flourishing*. However, this vision needs to be interpreted carefully: not as a set of disembodied freedoms, but as a range of *bounded capabilities* to live well – within certain clearly defined limits. Growth has been the default mechanism for preventing collapse. In particular, market economies have placed a high emphasis on labour productivity. Continuous improvements in technology mean that more output can be produced for any given input of labour. But crucially, this also means that fewer people are needed to produce the same goods from one year to the next (Jackson, 2009).

According to Hans Christoph Binswanger, Goethe in *Faust* confronts the promises and pitfalls of the Industrial Revolution and the economic growth that it generated. Goethe's protagonist is a representative of modern man who seeks to subjugate nature and to build up a new economic reality of freedom and

prosperity. However, Goethe warns that all these riches seen by Faust may be built upon an unsustainable illusion. Human progress entails curbing nature by constructing an artificial world consisting of cities, industry, transport, and intensified agriculture, symbolized in Faust by land reclamation through building of the dyke. In Faust Goethe draws attention to the new threats – consequences of rapid uncontrolled development, however Faust believes, that if all available forces are coordinated, all possible dangers can be overcome (Binswanger, 1994).

The Rio conference on Sustainable Development (1992) demonstrated, that, as H. Ch. Binswanger says, we live in a finite, limited world and that development is only sustainable if we take account of these limitations. The author returns to Goethe and his prophetic book and notes that we must be careful observers of nature's parameters and allow ourselves to be guided by them: *instead of continuing our attempt to dominate nature with linear thinking, we must cultivate an intuitive sensitivity and responsiveness to her complexities. Science must respond to this reorientation by developing the corresponding technology. (...) This is only possible if economists, too, understand that less can be more than in economic production what matters is not so much the amount produced but its increased utility, and that, accordingly, both quantitative and qualitative growth can benefit mankind without damaging nature. Perhaps Faust, or modern man, may never, as Goethe once hoped, achieve a moment so lovely that he would want to hold on to it forever. But if we strive to develop a more respectful relationship with nature, we may very well come closer to creating just such a moment* (Binswanger, 1998).

In his recent book – *The Growth Spiral* (2006), H. Ch. Binswanger revisits vital questions for modern societies: the ecological question and the money question. The author makes the economic circulation into a spiral – by describing the dynamic of money as a permanent growth engine. Our idea of money and its use is dynamic, however, money is not dynamic in itself. Money is not neutral, it *takes sides*. In the current economic structures, money flows firstly to those, who already have much, so the gulf between poor and rich widens more and more. The situation would change through such money creation organizing, that all people of a currency area can participate in it and have an access to money. Such process would bring, so far non-existent, neutrality of money. As far as economic growth is concerned, Binswanger says, that it should be as high and sustainable as possible. Such an approach does not exist in economic theory. Conventional theory is based on the ideas of circulation and balance. However, such economy cannot grow permanently. Binswanger attempts to define a minimal growth rate, at which the world economy would still be stable, his result is 1.8 %.

In each accumulation pattern, we find some economic and social regularities. The distribution of income between wages, profits and taxes, which ultimately allows the reproduction of various groups and social classes and such type of business organization, which define the organization of work and the usage of means of production belong to the most important regularities, from the chosen research perspective (Boyer, 1988).

David L. Russell (2010) proposes a definition of sustainability inextricably linked with technology. The author says that once we define a level of acceptable technology, population, and demand, we are able to define what is sustainable. Under this definition, coal mining, for instance, except for development of materials, would be classified as unsustainable.

The modern economy characterized by a high degree of interdependence, has been on the next stage of development, known as *wikinomics*. This phenomenon is constituted by four pillars: openness, partnership, community resources, and action on a global scale. Subsequently emerging global challenges, such as: global warming, finding new sources of energy, combating poverty and diseases, require cooperation of many countries and organizations – the complexity of the problem forces the openness (Tapscott, Williams, 2008). This kind of openness is the most desirable in contrast to the openness enforced under the threat of economic sanctions.

If, described as a component of *wikinomics*, action on a global scale, is related to other pillars: partnerships and sharing resources, it should foster exclusionary tendencies in underdeveloped countries. However, mostly the activity on a global scale refers to one corporation and its expansion into new markets or companies operating in one industry, coming from highly developed home countries. Such a global action contributes to the exclusion of entities from developing countries.

Conclusions

The role of science and technology in sustainable human development has been receiving considerable international and national attention. Science and technology have been central to poverty alleviation and economic development. However, the majority of the benefits of technology has not reached the developing countries. There have been technological gaps among and within the nations. Many developing countries lack the capacity to access and utilize advances in science and technology. Technology as crucial contribution to the sustainable development needs to be the poor and nature orientated. Its diffusion, production, adaptation and usage should be universal in order to provide social inclusion and enhancement of the technologically and economically excluded nations. The idea of *wikinomics* must be

popularized not only between the innovative countries, but also in the relationship innovator – recipient country.

The specificity of the sustainable development strategy requires an inclusive policy, which involves cooperation of national governments, NGOs and the business communities. The effective inclusive policy means such a collaboration of government institutions and business circles, which is characterized by adequate regulations, appropriate institutional arrangements. Particular emphasis is placed on the structural policy.

The phase of recession in the current business cycle, particularly severe for the financial sector, forced to think, that sustainable development is also essential to our financial systems and economies as a whole. Ways of overcoming the recession (preventing depression) must be consistent with long-term objectives of sustainable development and environmental strategies, as well as smart growth. The rampant economic growth may not be seen and promoted as the determinant of social and economic development. Particularly developing countries should be aware of the spiral of growth driving by the highly developed countries.

As noted Andrzej Papużiński (2011), sustainable development is a political idea. As one of the few, it has been implemented into law, political, economic and social policies and programs.

Therefore, we need strong nation-states, which will have the authority to establish limits for the activities of transnational actors and to control the inflow of investments in such a way that the activity will be a part of the process of sustainable development. A properly conducted process of implementing sustainable development strategies can contribute to the elimination of technological and economic exclusion. The policymakers can use ready-made, best practice or pursue their own. All these activities are aimed at making clear, what kind of business processes we are witnessing and causing, that we could consciously identify the stages of development and control whether the development is carried out in a way supporting socio-economic balance.

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Development-induced Displacement and Sustainable Development: The Case Study of Slezská Harta Dam in the Czech Republic

Wymuszone przesiedlenia a rozwój zrównoważony: przypadek zapory Slezská Harta w Republice Czeskiej

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Abstract

The main aim of this paper is to provide an overview of the issue of development-induced displacement in the context of sustainable development. We examine causes and spatial distribution of development-induced displacement and its impacts on social and economic situation of displaced persons (displacees) and affected communities. We focus on the issue also in the context of political and societal transformation in the Czech Republic (and Czechoslovakia before 1989). The discussion will rely both on a literature review and on a case study analysing the development-induced displacement linked to the construction of dam Slezská Harta in the Czech Republic in late 1980s and early 1990s. An analysis of available documents and other written sources (e.g. chronicles of villages) and semi-structured in-depth interviews with displacees and other affected people were carried out. Adverse processes, which ultimately lead to the deterioration of living standards of displaced people, often accompany development-induced displacement. The case of the displacement caused by the construction of Slezská Harta dam is not the exception, although the impact on the displaced persons must be perceived individually. Negative consequences of development-induced displacement could be mitigated by using the principle of sustainable development during planning and the implementation of a development project.

Key words: development-induced displacement, sustainable development, Czech Republic, Slezská Harta Dam, environmentally induced migration

Streszczenie

Celem niniejszej pracy jest omówienie zjawiska wymuszonych przesiedleń spowodowanych ekspansją ludzkiej infrastruktury – w kontekście rozwoju zrównoważonego. Przeanalizowano rozkład przestrzenny przesiedleń i ich wpływ na społeczną i ekonomiczną sytuację osób i przesiedlonych grup społecznych. Szczególną uwagę zwrócono na kontekst konsekwencji politycznej i społecznej transformacji dokonanej w Republice Czeskiej (przed 1989 r. Czechosłowacji). Dyskusja zostanie oparta zarówno na przeglądzie literaturowym jak i na konkretnym przykładzie przesiedleń związanych z budową zapory Slezská Harta przeprowadzonej na przełomie lat 80/90. Analiza uwzględnia dostępne oficjalne dokumenty i inne źródła, takie jak wiejskie kroniki oraz wywiady przeprowadzone z przesiedlonymi. Zaobserwowano niekorzystny proces związany z pogarszaniem się warunków życia osób dotkniętych przesiedleniem, choć każdą przesiedloną osobę należy traktować indywidualnie. Należy podkreślić, że obserwowane negatywne skutki przesiedleń są możliwe do zminimalizowania, o ile już na etapie planowania danej inwestycji kierować się będziemy zasadą zrównoważonego rozwoju.

Słowa kluczowe: przesiedlenia rozwojowe, rozwój zrównoważony, Republika Czeska, Slezská Harta Dam, migracja środowiskowa

1. Introduction

Development-induced displacement represents one type of forced migration. People usually have no choice but to accept the decision of a public body (agency, ministry, state owned company) and to relocate. Displaced persons (displacees) usually migrate within the borders of their home state, so they should be considered as internally displaced persons (IDPs), but not refugees (Birkeland, Jennings, Rushing, 2011). Development-induced displacement occurs when a political representation decides that an inhabited territory should be used in a different way, such as for an implementation of a development project that requests physical change of the landscape. The change of the landscape together with the displacement of people (and its consequences) creates a link to the concept of sustainable development.

Sustainable development has three main dimensions: ecological, social and economic (Tuziak, 2010) and it is researched from many perspectives. Ehrlich, Kareiva and Daily (2012) define the current and future challenges for sustainable development on the global level. They explore prospects for transformative change in three critical areas of sustainable development: achieving a sustainable population size and securing vital natural capital, both in part through reducing inequity, and strengthening the societal leadership of academia. Udo and Jansson (2009) indicate that global hierarchy of Maslow's needs in nations that are struggling to survive are less concerned with environmental sustainability than advanced and stable nations. These observations seem to lead to the conclusion that simultaneous social sustainability and technological sustainability will inevitably facilitate environmental sustainability, in the long run assuming good governance and infrastructure management capacities.

Environmental changes (degradation) or conflicts related to the lack of natural resources reveal also the social degradation (Piatek in Fiut, 2012). We identify development-induced displacement as one of the example. It is generally associated with official decision of the (local) governments and thus public (state) administration is responsible for the displacement and for its consequences. Nevertheless, undesirable processes that ultimately lead to deterioration of living standards of displacees often occur during and after the displacement (Cernea, 1995). The situation is not only caused by worsened economic situation of the displacees, but also by their social disintegration, stress and decrease in health status (Scudder, Colson, 1982).

The main idea of the sustainable development approach is that we can meet the needs of the present generation without compromising the ability of future generations to meet their own needs (WCED, 1987; Roznowska, 2011). In fact, the purpose of

some environmental changes intentionally caused by humans (urbanisation, construction of infrastructure and dams, mining) is current local economic development without deep long term cost/benefits analysis from the perspective of future generations in the region. The construction of many big river dams is used as the example of confrontation between long-term sustainable development approach and the strategy of fast/short-term economic growth (Stojanov, 2008). In this way Wai-Yin and Shu-Yun (2004) call attention to the fact that development in China may not be sustainable, since the major concern of its development policy is focused on sustainable *economic* development rather than sustainable development. Similarly Germond-Duret (2012) discusses why the particular project¹ did not meet the expectations in terms of sustainable development. She confirms that is because economic objectives still prevail over other considerations.

Development projects bring economic development and improvement of living standards of the population from broader region (or country). For example dams improve quality of life by the supply of water, electricity or by flood protection. There are about 45,000 dams in the world and 12% of them provide drinking water and 19% electricity (Nuera, 2005). In addition, 30-40% of irrigated land is irrigated thanks to dams. So one could say dams successfully contribute to food production as well (Nuera, 2005). However, construction of dams (or implementation of other development projects) has not only economic impact, but also environmental and social impacts. And the displacement of people is the most serious and most obvious negative social impact of the implementation of a development project.

According to the principle of sustainable development, environmental, economic and social impact has to be assessed during the planning of implementation of every (so-called) development projects. Furthermore, these impacts have to be assessed not only for present generation, but also taking consideration of future generations. The assessment of impacts should be done on several levels – for different groups of people based on their social, economic, ethnic or gender status. This is because although benefits coming from the implementation of development projects (e.g. construction of dams) are indisputable, the distribution of these benefits across different groups is not equal. In this way the benefits of dam projects (and services they provide) often use another people (industrial companies, people in cities) than people who bear social and environmental costs (WCD 2000). Local rural population, self-supplier, indigenous population, ethnic minorities and women are among the social groups which are often disadvan-

¹ In the context of Chad-Cameroon pipeline supported by World Bank.

taged (WCD, 2000). This is because they often depend on natural resources which are destroyed by the implementation of the development project.

2. Environmental change and migration

The development-induced displacement should be considered as a separate type of migration. However, it could be put in the context with other concepts and theories as well. One of them is the concept of sustainable development (see above), but it can be viewed as a part of the concept of environmentally-induced migration too.

Migration of the population can be perceived as a *coping strategy* in the sense that it is a reaction to the loss of employment or reduction in yields. Alternatively, it can be viewed as a long-term *adaptation strategy*, caused for example by a significant environmental change in climate variability (e.g. change of precipitation, extreme drought, etc.).

Households or community often send their members to bigger cities or abroad in order to ensure additional sources of income or to increase their skills (Stojanov et al., 2011). Therefore, for many people migration represents the path that allows them to escape from economic and social poverty, or the way of their own personal (Stojanov et al., 2013).

The discussions focusing on the complex relationship between human migration and environmental degradation have not received considerable attention until mid-1990s, when a group of geographers and environmental researchers presented their studies² concerning a significant number of migrants who are forced to leave their habitats involuntarily due to environmental change – that is natural or anthropogenic, or a combination of both. The scholars' debate is still continuing, despite the fact that it has become apparent that environmental change, including climate change and resource depletion, plays a contributing role in affecting population relocation processes, particularly on the regional level.

In this way Stojanov and Kavanová (2009) identified three categories of environmentally induced migration: 1. *Environmentally motivated migrants* (people who chose to move relatively voluntarily from their usual place of residence primarily due to relatively serious environmental concerns such as environmental pollution, natural or human disasters risks); 2. *Environmental displacees* (people who are forced to leave their usual place of residence, because their lives, livelihoods and welfare have been at serious risk as a result of adverse environmental processes and natural disasters. These are people who were displaced by both slow onset and rapid

onset environmental process and natural events such as natural disasters, land degradation, water or other natural resources deficiency and sea-level rise, industrial disasters). The category can be divided into two subgroups: *slow-onset or rapid-onset environmental displaces* – based on the speed of departure; 3. *Development-induced displacees* (people are relocated due to a planned land use change and economic development, for details see below). This type of displacement includes people who are displaced due to development-induced programmes (projects) such as river dam construction, irrigation canals building, transport infrastructure development, as well as nature/wildlife conservation projects. This kind of displacement differs greatly from the two previously mentioned categories since the displacement of environmentally motivated migrants and environmental displacees is unplanned and unintended.

3. Social and economic impacts of development-induced displacement

The development-induced displacement involves an aspect, which is not involved in other types of migration, a physical change of the place of origin, due to which displacees can never come back, not even to visit the place. This fact, together with the nature of forced migration, when the individual must submit to the decision of a third party and has no ability to defend itself, leads to some typical reactions of displacees and to processes typically accompanying the displacement.

A principal one is social disintegration, which is characterized by separating social ties in the community and loss of social capital through dismantling the community life. An individual must make significant effort to build new social networks after the resettlement (Cernea, 1996). Adaptation to new environmental and social conditions and to the new way of life can be very difficult especially for elderly people. According to Scudder and Colson (1982), extreme stress is accompanied by trauma, depression, grief over the loss of home and higher rate of morbidity and mortality. Disruption of a way of life and routines can cause feelings of chaos, unpredictability and futility (Downing, 1996).

A national law usually orders to pay compensation to people who lost their property. But there are cases, especially in developing countries, where only a small part of affected people is compensated (Cernea, 1996). Compensations usually exclude the poorest citizens who have a small property, but who are deeply dependent on natural resources such as water and land that are often damaged or completely destroyed by construction of the development project. The compensation is performed often in the form of one-time payment of cash, but it is often delayed and usually cannot cover lost livelihoods

² For instance see key works from the age (Myers, 1993; Hugo, 1996).

(WCD, 2000), construction of new houses, buying new land with the same quantity and quality. Other problems arise regarding the choice of places where people are resettled to. These are often areas poor in quality and quantity of resources or areas with disturbed environment close to the particular development project e.g. dam or mine. Sometimes basic care is not provided in places where resettlement is directed, there is a lack of hospitals and schools, lack of electricity supply or potable water (WCD, 2000). Resettlement to barren areas with little opportunities for livelihood, inadequate compensation or failure to provide basic services lead to the deterioration of living standards of displaced persons. According to a study prepared for the Asian Development Bank in 1998, 46 % of Chinese displacees were in extreme poverty and 75 % of Indian displacees got poorer (Nuera, 2005).

4. Causes and spatial distribution of development-induced displacement

Construction of dams, urbanization and construction of transport infrastructure, mining and timber industry are among the main causes of development-induced displacement. Accurate data on the number of displacees are not available, partially because state offices do not often publish these statistics. However, the number and spatial distribution of displacees around the world is determined by the extent of investment in infrastructure, rapid development of urban agglomerations and construction of dams. Number of displacees then depends on population density in the locality. From the foregoing information it is clear that displacees are found mainly in developing countries.

Urbanization and construction of transport infrastructure is currently considered as the main reason for development-induced displacement. It is estimated that 6 million people a year are displaced just because of urbanization and construction of transport infrastructure (Cernea, 1996). This number does not seem to be overestimated, for example the demolition of 90 000 dwellings in slums in 44 localities in the city of Mumbai led to the displacement of approximately 450 thousand people between November 2004 and April 2005 (Mahadevia, Narayanan 2008).

An estimate of the number of displacees due to the construction of dams is offered e.g. by the World Commission on Dams (WCD). According to WCD (2000), their total number ranges from 40 to 80 million. It is estimated that only in China and India 26 to 58 million people were displaced due to the construction of dams between 1950 and 1990. Tan, Chen, Hugo (2009) reported that only in China 24.4 million people were resettled between 1949 and 2006 and this number is constantly growing. In 2008 China completed sixteen-years displacement of 1.4 million people caused by the construction of

the Three Gorges Dam and its associated infrastructure. Given the fact that China has built almost half of the total number of dams in the world (Tan, Chen, Hugo, 2009), it is clear that China contributes largely to the total number of displacees. Dams that have caused the largest displacement of people are mainly located in Asia, Latin America and Sub-Saharan Africa.

In the context of Central Europe region, we can consider migration flows from *Black Triangle* in the past due to the combination of coal mining activities and heavy air pollution. *Black Triangle* was the name for strongly industrialized bordering parts of former communist states of East Germany, Czechoslovakia and Poland³.

5. Development-induced displacement in the Czech Republic

Although it seems that the problem of the development-induced displacement applies only to developing countries, this is not correct. Thousands dams and mines were built in Europe and North America in the past on the territories which had already been occupied. Nevertheless, the following text relates to the issue of resettlement in the Czech Republic and former Czechoslovakia, where development-induced displacement took place mainly due to mining and the construction of dams.

Development-induced displacement was accompanied by a number of failures in the territory of current Czech Republic. It was given also by the fact that most of the planned resettlement took place under the totalitarian regime⁴ where individuals and communities could not participate in any decisions and their potential protests were not taken into account. Mining and construction of dams has been conceived as a public interest and interests of individuals or groups had to retreat. Displaced persons were not properly compensated in many cases. For example, when planning the construction of Slapy Dam in 1950s, people were told that *state would not proceed harshly, but all displaced persons must realize that they must bring a sacrifice, because the financial situation of the state is not the best* (Kouba, 2007). Displacees usually received cash compensation but it was not always sufficient to provide replacement for their lost properties (Kouba, 2007). After 1989, there have been so far three cases of the development-induced displacement in the Czech Republic. But decisions about these projects were made before 1989.

Surface coal mining and some activities associated with it, such as the creation of dumps in Northern

³ The situation was improved after 1989 when new technologies were introduced and pollution levels were significantly decreased. The improvement is a good example of international cooperation for the common good.

⁴ The former Czechoslovakia was under communist rule in 1948-1989.

Bohemia struck an area of approximately 250 km² and caused destruction of 116 villages and town parts since 1960s. About 90,000 people were resettled from destructed villages (Farský, Zahálka, 2008) to prefabricated housing estates in towns or other villages. Destruction of many villages and town parts, including the historic centre of Most town, and the resettlement was conceived as a public interest before 1989. Ecological or social damage was not taken into account in that time. So in that time we could not talk about sustainable development, only economic impacts of the projects (for present generation) were considered.

Announcement of regional ecological limits for mines and dumps in 1991 has led to restriction of development-induced displacement. These limits define the boundaries through which the mining or waste disposal must not intervene. They are defined in order to protect the individual municipalities, calculated with the minimum sanitary zone around these villages or towns (Farský, Ritschelová, 2006). They protect e.g. the village of Horní Jiřetín with more than 2,000 inhabitants, which would be completely destroyed by mining, or the town of Litvínov. In the case of breaking the ecological limits, the mining would approach at a distance of only 500 m to Litvínov. This would mean real ecological problems for the region and probably also a decrease in the health status of the inhabitants.

However these limits have been attacked many times by mining companies, Ministry of Industry and Trade as well as individual politicians since its announcement (Říha, 2011). Regional ecological limits for mining were threatened the most seriously during the discussing about the national energy policy in 2003-2004. Another threat is the announcement of the so-called policy of the raw materials in the Czech Republic in 2012. Nevertheless, limits are still in effect, they have many defenders among Ministry of Environment (e.g. new version of Strategic framework for the sustainable development was accepted in 2010), non-governmental organisations, municipalities, local politicians and citizens.

6. Case Study Slezská Harta

6.1 Methods

The Slezská Harta Dam was built in the 1980s and early 1990s. About 675 people were resettled during the process of its construction. It is one of the most recent cases of the development-induced displacement in the Czech Republic. The aim of this case study is to determine the consequences of this particular development-induced displacement on individuals (displaced persons) and communities (villages) and to find out how the whole process of displacement was carried out. Field research in Slezská Harta micro-region was held in September 2010. Research was limited by a long time interval

since the major wave of planned resettlement took place in 1989-1991. Still authors are convinced about the importance of this study which brings authentic memories of displaced persons. In our opinion, forced displacement represents an important (for some displacees turning) point in someone's lives and people tend to remember these moments very well. Because we conducted qualitative research, we cannot bring strong evidences. However, in our opinion, we could offer good general knowledge about the process of this particular displacement.

First, analysis of the available documents and other written sources was carried out. Chronicles of the affected villages were valuable sources, especially the chronicle of the village Leskovec nad Moravicí, which was partially flooded after the dam's construction. The construction of the dam and resettlement were described very properly in particular volumes of the chronicle. The resettlement was the main theme of the chronicles between 1984 and 1990. The other sources of data for this study were semi-structured in-depth interviews with displacees and other affected persons. The selection of respondents was conducted using snowball method. We found the name index of displaced people in one chronicle, who had to relocate from the Leskovec nad Moravicí due to the construction of the dam. Next thing we knew was that new housing estates were built (mainly) for displacees in the upper part of the village. New housing estates were also built in three locations in town Bruntál in the late 1980s and we found out from documents that displacees were also partly relocated to these addresses. Next we compared last names from the name index in the chronicle with names on door bells in these addresses. The majority of descendants of displacees lived in those flats, but we also found some of displacees. Then we used their advices where some others displacees lived. Further staff in public offices in affected villages was asked for addresses of displacees (but they did not have a list of displacees and did not want to answer because of the protection of personal data) as well as some people in shops or pubs. This method has obviously weak sides (does not lead to a representative sample) but it is appropriate for the case because members of the target population were difficult to locate. That was one of the main reasons why qualitative research was used (using semi-structured in-depth interviews). Quantitative research unsuitable in this case because of lack of data of number, names and current addresses of displaced persons and more than 20 years history of the resettlement.

Semi-structured interviews were conducted with 19 persons (14 women and 5 men) affected by the dam construction, mostly by displaced persons. At the time of research 10 respondents were in productive age (41- 60 years), and 9 respondent were retired

(62-90 years). Majority of them have been moved in 1988-1990 from flat (house) to flat within Leskovec nad Moravicí village or from Leskovec nad Moravicí to Bruntál, or from Karlovec to Bruntál.

The consequences of the planned relocation on villages (communities), which were partially flooded, are formulated from secondary data sources (see below) as well as interviews with officers of the villages and municipal authorities, Bruntál Registry Office, Department of Building and Planning in Bruntál, Chairman of the Slezská Harta micro-region. Data on the number of displacees are unavailable, the estimation of the extent of the resettlement is derived from records in the *Historical Lexicon of Municipalities in the Czech Republic 1869-2005*, chronicles of the village Leskovec nad Moravicí and from information obtained during the interviews.

6.2 *The consequences of dam construction and resettlement on communities and their development*

Slezská Harta Dam is located in the Moravian-Silesian Region in the district of Bruntál town in Moravice river valley. Slezská Harta Dam is located at the land registry of nine villages, about 870 ha were flooded. The dam was originally planned as the water reservoir for the Ostrava agglomeration, now it serves mostly for the flood protection, production of hydroelectricity and for tourism.

The construction of dam was for the first time seriously discussed in 1964 (The chronicle of Leskovec nad Moravicí, 1980). The lengthy decision process affected the municipalities, which were expected to be affected by potential dam, because the building ban was announced for these villages in 1970s (Mezina, 2010). When it became clear that the construction of the dam will actually become reality, services and jobs were transferred out of the villages. Other problems arose after the dam began to be built. Some of these were the increased intensity of trucks, noise and dust.

Six villages were partly located in the flood area of the dam. The construction of the dam had the biggest impact on the village of Karlovec, which was flooded completely. Only the church and cemetery are left on the banks of the dam. Forty seven houses including senior house, cinema and school were destroyed and approximately 255 people were displaced (Lexicon, 2007). The impact assessment of the dam's construction and resettlement for the other five villages, which are now located on the dam's bank, is more difficult to design because they were affected only partially and each of them in a different scale. Among these villages Leskovec nad Moravicí and Nová Pláň were affected the most. The number of houses declined from 32 to 10 between 1981 and 1991 in Nová Pláň, the population declined from 124 to 29 inhabitants in the same period (Lexicon, 2007). In Leskovec nad Moravicí

69 houses, 14 cottages, 53 residential units and approximately 10 other buildings (e.g. factory, health care center, two kindergartens) were destroyed (The chronicle..., 1985). About 300 people had to move from the flooded area of the village.

Construction of the dam and the subsequent resettlement of people had, in the short term, a negative impact on the affected communities. Besides the decline in population, the construction of dam had negative impact on job opportunities and on the scale of public services. This applies especially to the village Leskovec nad Moravicí, where many services (e.g. kindergartens) were located in the flood area, together with the factory where 260 persons were employed. Loss of job opportunities was also one of the causing factors of subsequent migration from un-flooded areas of the villages to the town of Bruntál in 1990s.

The impact of the dam on affected villages is ambiguous after twenty years since its construction. The dam has great potential to become a popular tourist destination, yet this potential remains untapped. Since the dam serves as a reservoir of drinking water, there are some limitations e.g. ships with an internal combustion engine are prohibited. There is a lack of tourist facilities such as accommodation and restaurants in the surroundings of the dam. However this situation could be changed in the future – first investments have already come into the micro-region of Slezská Harta (SHM, 2011). Piers were built in some villages and there is a plan for a construction of a large quay. The expected future development of tourism in this region could be a significant benefit for the villages and their inhabitants.

6.3 *The consequences of development-induced displacement on displaced persons*

The fact that the dam would be constructed was known for sure in 1984 when exploratory and preparatory work began. However, the conditions of resettlement were not clear. It was not known how the property of displacees will be purchased, where spare housing will be built or how compensation will be carried out. Communication with the investor of the project (state enterprise) was very bad, officers reported information with delay, equivocated on different facts and gave promises that they eventually did not fulfil. This contains e.g. the promise of payment of relocation costs or the special cash compensation for the fact that people are forced to flee their homes.

Compensation was provided only to displaced persons who owned land or building in the flood area of the dam. Compensation was paid in cash after the appraisal of property. Moreover these people had the opportunity to get a flat for rent in the newly built housing estates.

Problems and dissatisfaction of the displacees accompanied the appraisal of property. Some owners

reported that farm buildings or greenhouses were not taken into account during the appraisal of property or that amortization of the buildings was calculated unevenly. Contract for the redemption of the property was sent by mail. The attached letter threatened that if the owner will not sign the contract, the expropriation proceedings will start immediately (The chronicle..., 1987).

Respondents (displacees) answered the question: *how the purchase of their property was carried out and whether they were satisfied with it?*

The answers were as follows: *Well, it was terrible. (...) The first estimate was on 120 000, or 117 thousand crowns. And so we appealed, then another appraiser came and he increased the price to 170 thousand.*

Well, I tell it otherwise. No one can remember... My grandmother had a house there – it was a nice farmhouse with land, everything. And they (appraisers) came, they gave us the contract, no one ask anything. Here is 170 thousand crowns for your house and bye, the departure is on 15th.

Families, who lived in the flooded areas in rented flats, had the opportunity to get a flat for rent in the newly built housing estates. They received no other compensation, although they often invested money into rented flats (e.g. installation of heating) or they had small gardens or sheds (The chronicle..., 1987). On the other hand, they moved to newly built flats. This was considered by some respondents as a significant improvement in their living conditions. But the rent for the flat was much higher. Respondents answered diversely to the question *whether the movement improved or worsened their economic situation:*

Well, for sure it had an influence. Because here (note: in town Bruntál) everything was more expensive, yeah. It was cheaper in Leskovec. You know, there I paid rent less than 50 crowns, and after I moved here in 1989 I paid 600, 700 crowns. So this was quite a big increase. And in the village there was an advantage that we had a garden, we could have chickens, rabbits... It was better in the village in this aspect.

I improved my life! I improved it after movement! This was called boxes (note: the housing estate in the village) - not very good, no no.

The respondent who moved from the flooded area of the village Leskovec to un-flooded area in the same village perceives her economic situation in a broader context. According to her, her economic situation did not worsen, but the construction of the dam had an impact on her life by reducing services in the village. Another respondent perceives the problem similarly. She said that the construction of the dam meant the damage of the factory in the village and that it had negative effect on the number of customers in her shop.

There are several reasons why the vast majority of people from flooded areas of the dam Slezská Harta

moved to prefabricated housing estates. One is that the majority of displacees, who owned a house, was already older by that time. Some of them could welcome the possibility of a comfortable life in a flat:

We couldn't choose where to relocate. They gave us a flat in Bruntál – so what we could do... But we were already older, so we said to ourselves "older people belong to a flat". So we got a flat, we are very satisfied with it.

There were horrible conditions in the village after the construction of the dam had begun. So some people were looking forward to a movement to newly built flats in the town. There were many elderly people (note: among displacees), youngsters wanted to go to Bruntál.

But the main reason why displacees moved from houses to flats was that the compensation received was not enough for building a new house.

Question: whether she was satisfied with the appraisal of her house – *No, not at all. Because we couldn't buy anything for it. We wanted to buy a house, but they didn't gave us much money for our house...*

Why she moved to the village Razová? *I didn't want to move here, this village is so ugly... But we wanted to buy a house and we couldn't choose much. Everything was so expensive! So we bought this ruined house. We bought it with money we get for two houses – imagine!*

According to other respondent, displacees spent most of the money they got as a compensation to furnish their flats. The furniture they had in houses before the relocation did not fit to flats:

The displacees got money for their houses, yes, they had. But the irony is that when these people moved into the flat, they couldn't take with them furniture they had in cottages, houses. So basically the money they got as compensation spent to furnish their flats.

The statements of respondents indicated that displacees were satisfied (except of one respondent) with flats they got regardless of whether they wanted or did not want to move:

Oh yes, I was, I was. Everything was new!

I was content. The comfort, you know ... I was looking forward to moving.

Respondents answered differently to the question whether they could choose where to move. The fact is that displacees from Leskovec nad Moravicí had the opportunity to resettle within the village by moving to newly built housing estates in the village (The chronicle..., 1986, 1988). On the other hand, displacees from Karlovec or other affected village did not have this opportunity because spare construction of housing estates took place only in Leskovec nad Moravicí and Bruntál. Displacees could build their house in their village of origin, but compensation for lost property was not enough to do it.

Respondents claimed that they have contacts with some of their former neighbours, but they also admitted that they see them/visit them only occasionally. The fact that displacees were resettled mainly on three localities in Bruntál meant that social ties were not severed much.

Yeah, they (note: displacees) are here in this house. From Karlovec, from Leskovec. But lot of them died. And about my children – daughters moved to nearby villages.

Yes, they moved us together. There are about three main places where displacees were moved.

The elderly people with long-term relationship to the locality suffer worst from the development-induced displacement (Scudder, Colson 1982, Downing, 1996). The resettlement was accompanied by extreme stress. This is illustrated by the fact that one elderly woman from Leskovec nad Moravicí hanged herself in 1988. In a letter she wrote before her death it is stated: *Now, when I wanted to live the rest of my life in peace and calm, I have to move with a sense of injustice that was perpetrated upon us* (The chronicle..., 1988).

When respondents were asked whether the resettlement had negative influence on their health, majority of them answered negatively, although they said they miss the place as an afterthought.

No, no, no, I did not have these problems (note: health problems). But there were people (note: displacees) who had these problems, yes.

No no, but I miss it. (Note: he points from the window to the dam) *There is where I lived, there is where I worked. I did not want to move, but I had to. Oh, it was...*

No, we always have something to do. But it was terrible for the elderly - a lot of people were ill, they died quickly. What I can say to you? You know, it depressed me...

Several respondents said that they still have psychological problem and that they have not reconciled with the displacement.

Question: whether she got used to place where she lives now?

We are here so many years, since 1989. And I feel like a stranger here. It is (note: the displacement) the worst thing that could happen. And the worst thing about it is that nobody cared, nobody asked you whether you want to move or not. They forced us to leave, they turned off the water... They really did not ask, that's the worst.

Question: whether she got used to place where she lives now?

No, never. Everyone in the town lives for themselves. We used to talk with neighbours in the village, here you leave the house, you are on the pavement and you even can't find a place where to sit...

7. Conclusion

Poorly-led development-induced displacement is often accompanied by a number of failings. The most important is the decrease in the quality of life and impoverishment of some displacees. This is caused by the loss of access to the common property (Cernea, 1995), insufficient compensation, loss of job or land, social disintegration, stress and decrease in health status of the displacees. These processes break two basic aspects of the concept of sustainable development – social and economic. But the implementation of a development project itself often threatens also the ecological aspect of the concept of sustainable development.

However, these adverse processes could be mitigated or avoided by a well-planned resettlement, which would remember the principles of sustainable development. First, it is necessary to consider all project alternatives (one of them should be also not to implement the project at all) so that nature and inhabitants of the area would be affected as less as possible. The possibility of avoiding or reducing the number of displacees is also necessary to consider. Second, plans for further sustainable socio-economic development of displacees or a community in the new place of residence must be prepared in advance. Displacement must be properly compensated. In-kind compensation should be preferred to the cash compensation, especially in the case of loss of the land (e.g. equal size and quality). But also people without property and land ownership must receive assistance for improving their living standards after the displacement. Compensation for property losses must be concerned as the program for sustainable development of the population/community, including access to natural resources, public services and infrastructure (WB, 1990; Nuera, 2005; Cernea, 1997; Dawson, 2007).

Improvement of planned relocation is particularly difficult for developing countries with high population density, low GDP *per capita*, lack of resources and inexperienced institutions. However the situation has improved in many states during the last decade (e.g. in Brazil, China). However it is not possible to completely prevent all displacees from the negative consequences of the development-induced displacement (e.g. social or health) – that is why it should be endeavoured to avoid the displacement at all. For example, our research at Slezská Harta micro-region proved similar mechanisms reported in literature on the theoretical effects of extreme stress in the process of development-induced displacement (Scudder and Colson, 1982). Although the displacement took place twenty years ago, testimonies of some respondents were accompanied by negative emotions, sadness and sense of injustice.

Table 1. Aspects of the displacement due to the construction Slezská Harta Dam Source: Cahliková, 2011.

Legislative	<ul style="list-style-type: none"> • The displacement took place under the totalitarian regime. • Lack of legal framework - just a general regulation concerning the issue of compensation mechanism. Moreover this regulation was interpreted in various ways.
Organizational	<ul style="list-style-type: none"> • Poor communication and cooperation with displacees and community representatives. • Resettlement did not take place within a development program for affected villages, there was a termination of services and job opportunities in the communities.
Economic	<ul style="list-style-type: none"> • Inadequate compensation for lost properties, only cash compensation (not "house for house"). • Inadequate compensation of especially displacees who owned a house as the compensation did not suffice to buy or build a new house. • There was not an increase in unemployment among displacees.
Social	<ul style="list-style-type: none"> • Social ties did not get torn much. • The majority of displacees was relocated to newly built housing estates.
Health	<ul style="list-style-type: none"> • Stress and deterioration of health was manifested among some displacees, but this aspect must be assessed individually.
Geografic Environmental	<ul style="list-style-type: none"> • The majority of displaces was relocated to three locations in town of Bruntál, which is about 5,5 km from the Slezská Harta. • 870 ha of the valley of the river Moravice were flooded.

The displacement due to the construction of Slezská Harta Dam was accompanied by a number of failings, e.g. inadequate compensation. On the other hand, certain steps must be assessed positively, such as the fact that the majority of displacees were relocated only to three localities, which means that social ties did not get torn much. To sum up, the impact on local communities was negative. Decrease in number of inhabitants in affected villages led to lower investment, which meant the termination of services and job opportunities. The consequences on relocated persons should be assessed more individually. People who lived in their own houses were affected more negatively than people who lived in rented flats. Some respondents from second group claimed that they were happy to move to a new flat in town. Aspects of the displacement

due to the construction of the dam Slezská Harta are summarized in the Table 1.

Finally, similar failures to the ones described in literature dealing with development-induced displacement were found in the case of displacement due to the construction of the dam Slezská Harta. Generally it is assumed that these failures accompany displacement that occurs in developing or newly developed countries. However, it seems that these failures take place also in countries with non-democratic regimes where participation of displacees and local communities is not assured.

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Opportunities for the Sustainable Development of Rural Areas in Serbia

Wprowadzanie rozwoju zrównoważonego na terenach wiejskich w Serbii

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Abstract

This article discusses current problems in rural Serbia and investigates development opportunities. The intention is to indicate strengths and weaknesses of the present situation and to highlight possible solutions for sustainable development. The results were presented in the form of potential methods for future development and are discussed through several issues: sustainable regional development and sustainable rural development as an alternative to excessive urbanization; cultivating the tradition of the village and development of rural tourism; cultural heritage in the service of sustainable development; building the ecological image of the village through promotion of the local economy and organic farming; and social capital and infrastructure development as factors of sustainable development. The conclusion is that in planning the development of rural areas, villages should be seen as a value and their potentials and regional characteristics should be promoted and used in order to contribute to sustainable development.

Key words: rural development, sustainability, localization, tourism, heritage, agriculture, tradition

Streszczenie

Artykuł omawia problemy występujące na obszarach rolniczych w Serbii. Celem jest określenie silnych i słabych stron takich obszarów i wskazanie możliwych rozwiązań, zgodnych ze zrównoważonym rozwojem. Przeprowadzone badania umożliwiły na wskazanie najlepszych metod postępowania odnoszących się do przyszłego rozwoju, a związanych z zagadnieniami takimi jak: zrównoważony rozwój regionalny, zrównoważony rozwój obszarów wiejskich jako alternatywa dla nadmiernej urbanizacji, kultywowanie tradycji i rozwój agroturystyki, dziedzictwo kulturowe, budowa wizerunku ekologicznego wsi poprzez wspieranie lokalnej gospodarki i rolnictwa ekologicznego, kapitał społeczny i rozwój infrastruktury jako czynniki rozwoju zrównoważonego. Otrzymane rezultaty wskazują, że planując rozwój obszarów wiejskich należy dostrzegać ich wartość, wspierać ich potencjał, a poprzez to wprowadzać rozwój zrównoważony.

Słowa kluczowe:

Rozwój obszarów wiejskich, zrównoważoność, lokalizacja, turystyka, dziedzictwo, rolnictwo, tradycja

1. Introduction: Problems of rural Serbia

Development problems and the stagnation of villages were recorded in most European countries in the 20th century. As a consequence of economic growth and urbanization rural areas suffer negative social, economic and environmental impacts. Strong pressure on unbuilt areas near cities to meet

the growing demand for housing and recreational activities and the negative impact of mass tourism and intensive agriculture lead to pollution and destruction of cultural and natural landscapes as well as rural areas. According to Brown and Kulcsar, economic distress tends to be disproportionately located in Central and Eastern Europe and is concentrated in rural areas. They identify four

factors that explain this: 1) many redundant workers who lost their jobs in urban industrial complexes were village residents, 2) foreign investment and new jobs usually target urban enterprises; 3) states reduce their role in the provision of rural health and other essential services; and 4) employment in agriculture has declined and has not been replaced by other jobs (Brown, Kulcsar, 2000).

The importance of questions concerning the status of rural areas in Serbia is particularly important if we bear in mind that Serbia is a predominantly rural country. Rural areas make up about 85 % of the total territory, and the rural population makes up about 55 % of the total population (Milić, 2011). At the same time, demographic crisis and the depopulation of villages are present and are followed with disparities between regions that are believed to be among the largest in Europe. According to a survey conducted by the United Nations Development Program, as much as 50 % of village residents in Serbia are not satisfied with the quality of life (Government of the Republic of Serbia, 2008). Rural areas in Serbia, and particularly those in mountains, are uninhabited and marginalized with poor transportation links and an undeveloped community infrastructure. One of the reasons for this is the migration to cities caused by the need for employment. In search of existential safety, villagers often become daily migrants using time-consuming transport. Employment of male residents outside the village leads to the transfer of agricultural activities to women, whose overload even encourage further emigration. Migrations to cities can also be caused by the inaccessibility of health services, social infrastructure and the poor conditions of schooling¹. A long distance to the nearest high school results in the lower school attendance of rural children: 79.5 %, compared to 87.3 % in urban areas (Government of..., 2008). The shrinkage of the population in villages results in a small number of children living in villages, and therefore the organization of pre-school institutions and specialized pupil buses is considered too expensive or unnecessary. Similarly, the rural population is disadvantaged when it comes to the provision of roads and social infrastructure because the cost of establishing the infrastructure is significantly higher in areas with lower population density. Deagrarianization of Serbian villages is affected by the social and economic insecurity of agricultural households (e.g. selective health insurance for farmers) and neglecting the peasantry as a socio-professional category. Inequalities in the development of urban and rural

areas are only enhanced by the affirmation of economic activity and infrastructure around the rivers Danube, Sava and Morava, and especially in the cities Belgrade, Novi Sad and Niš.

The deterioration of the age structure of the population in villages: the average age of the rural population in Serbia in 1953 was 32 years, and in 1991 it was over 50 years (Government of..., 1996) is one of the consequences. The number of villages in Serbia was reduced in the second half of the 20th century through the merging of neighboring villages, attachment to towns or through losing inhabitants. The bad state of villages affects cities negatively as they fail to integrate the population that comes from rural areas.

Sustainable regional and rural development as an alternative to excessive urbanization

Sustainable development is today accepted as a guiding principle in plans, projects and policies in the private and public sector. The term was introduced in the 1987 Brundtland report as *development that meets the needs of the present generations without compromising the ability of future ones to meet their own needs* (Brundtland Commission, 1987). Sustainable development implies the integration of economic, environmental and social issues. The guiding objectives are social progress that recognizes the needs of all people, environmental protection, the wise use of natural resources and maintaining high and stable levels of economic growth. In particular, sustainable development means improving the quality of life, environmental protection and pollution prevention, reduction of waste production, recycling, the development of local resources and the local economy, respecting diversity, the development of a democratic society, preserving the heritage and the use of renewable energy resources. In the Sustainable Development Strategy of the Republic of Serbia (Government of..., 2008), the following principles are mentioned as leading in achieving sustainable development: solidarity, open and democratic society, citizens' participation in decision making, integration of environmental issues into other policies, the polluter pays principle, and sustainable production and consumption.

Rural development deals with everything that has happened, is happening or should happen in rural areas, with the aim to improve the lives of the rural population and preserve the rural landscape. The following aims are mentioned in the Sustainable Development Strategy of the Republic of Serbia regarding rural development: stopping the trend of depopulation of rural areas; decentralization and regionalization; the reduction of disparities in regional development, within regions and between cities and villages; the development and improvement of infrastructure; the protection of natural

¹ According to the 1994 census, 50 % of elementary and secondary schools in Serbia at that time did not have a phone line (Petovar, 2003). These were mainly schools in villages. 45.3 % of schools had only one or two classrooms, and in 28 % of schools there were no toilets in the building.

resources, and the promotion of public involvement in planning (Government of..., 2008). Similar and complementary to the mentioned above are the objectives of rural development itself: to keep the population in rural areas, equal the quality of life in rural and urban areas, provide the conditions for the return of the population in villages, increase income and support the economic activities of the rural population.

These issues are also closely linked with regional policy since the appropriate regional planning can remove negative impacts on rural areas and contribute to sustainable development. Mihaljević (2006) discussed sustainable regional development and had the idea of a radical approach to economic policy. As the development axis of Novi Sad-Belgrade-Niš attracts people in Serbia, the proposal is that benefits and stimulative measures for housing and employment should increase in order to help unemployed people to settle in areas with depopulation problems by moving away from this axis state aid. As one of the principles of the regionalization of Serbia, Mihaljević further mentions the demetropolization of Belgrade through the relocation of functions and institutions of national importance which would help develop other parts of the country.

It is essential that development strategies (e.g. Spatial Development Strategy and the Sustainable Development Strategy) are compatible with each other, and establishing an interministerial and intersectoral collaboration is a necessity. In the planning of rural development, this would mean setting rural issues as cross-cutting issues in the development policies of the country. One option that would contribute to the better position of the village is the creation of an authority responsible for the issues of rural development that would contribute to the consolidation of responsibility and an integral approach to rural development.

Potentials and possible development model for villages in Serbia

In the planning of the development of rural areas, villages should be seen as a potential, not as a problem, and in accordance with that their values should be promoted and used for achieving people's benefit. Urban and rural areas are closely linked – the villages benefit from the cultural and social activities of cities, and cities benefit from the recreational value of rural areas that contribute to the cultural and natural diversity. Therefore, cities and villages should be partners, not competitors. The planning of rural development should focus on the specific characteristics of regions and the use of potentials already present in Serbia – agricultural resources, favorable climate, numerous water courses, possibilities for the production of healthy food and the use of alternative energy sources. The natural and

cultural heritage of rural areas can form the basis of social and economic regeneration. Mountain landscapes rich in national parks, forests, rivers and lakes provide suitable locations for active recreation in nature and extreme sports. Cultural, sports and traditional events can serve as a basis for rural tourism development and the improvement of the economic situation of villages. The rich cultural and historical heritage of Serbia (archaeological sites, ancient and medieval churches and monasteries etc.) can have the same purpose.

Cultivating the tradition of the village – development of rural tourism as a factor of sustainable development

Tourism has an increasingly important role in the economy of many countries, and it can contribute significantly to employment and improving the social, cultural and natural environment. *Agenda 21 for the Travel and Tourism Industry* was adopted in 1995 by the World Tourism Organization – UNWTO, World Travel and Tourism Council – WTCC and the Earth Council. It suggests the development of tourism on the principle of sustainable development (UNWTO, WTCC, Earth Council, 1995).

The World Tourism Organization defines sustainable tourism as *tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities'* (UNWTO website). At the same time, tourism is one of the most dominant economies in villages and it could be a basis for rural development. Aside from the natural environment, villages are characterized by the presence of traditional architecture, crafts and services, and they have a rich cultural and historical background. Rural tourism includes a variety of tourist activities such as agro-tourism (farms where tourists have an opportunity to work as farmers), ecotourism, gastronomic tourism, visiting cultural, historical and natural attractions, outdoor activities and excursions, walking, hiking, hunting, fishing, and horseback riding, etc. Ecotourism, or ecological tourism, is a subset of sustainable tourism, which focuses on the ecology and environmentally responsible visits to protected natural areas for the enjoyment of nature and accompanying cultural features.

Serbia has potentials for developing rural tourism. One of these potentials are *Ethno houses* – homes and additional objects around them built in the traditional style of folk architecture that contain elements of folklore, tradition, heritage and traditional agricultural activities. *Salaš* is a previously isolated farm typical for 19th century northern Serbia, surrounded by fields and vineyards, made of mud and organic materials and covered with adobe. *Ethno villages* provide insight into the methods of making old houses. Ethno parks represent reconstructed village ambiances made of wood or stone.

In order to develop sustainable tourism, it is necessary to improve the transport and tourism infrastructure, restore important sites and promote the potentials of the village. The development of rural tourism in Serbia would contribute to the employment of local people and thus increase the opportunities for the young and educated people to stay in villages.

Cultural Heritage in the service of sustainable development of rural areas

The cultural heritage of Europe, including the cultural landscapes of rural areas, is the expression of its identity² and has global significance. It is the everyday environment of a large number of people and it enriches their quality of life. In order to stop it being neglected and damaged it is necessary to build awareness about the role of cultural development in the realization of social and spatial balance. The value of cultural heritage and the concept of cultural diversity have been recognized in international documents and strategies, and the presence of culture in development policies grows. *Agenda 21 for Culture* mentions commitment to the preservation and the development of authentic local cultures that have a historical connection and interactive relationship with the territory as one of the objectives (United Cities and Local Governments, 2004). This agenda was adopted by local governments around the World and by three cities in Serbia – Novi Sad, Subotica and Zrenjanin. In 2005, UNESCO adopted the *Convention on the Protection and Promotion of the Diversity of Cultural Expressions*, in which the objectives are: the affirmation of the link between the culture and development of the country (especially in developing countries) and the recognition of the specific nature of cultural activities as holders of the identity (UNESCO, 2005). The concept of sustainable development has also evolved according to changes in understanding the importance of culture. Australian researcher John Hawkes (2001) proposed culture as the fourth pillar of sustainability.

There are many examples of how cultural heritage can be used in the regeneration of the region and especially in small settlements. Former mining settlements have a diverse and rich collection of industrial heritage³ that can be used for the economic development of the area and help turn what was

considered a handicap into an advantage. This helps creating a new image for the area, the development of tourism and preventing emigration. Former industrial settlements in Serbia represent an opportunity for future sustainable development (Cizler, 2011). An actual current example is the regeneration of the Senj mine. Founded 1853, it is the oldest Serbian coal mine, with preserved mines, workshops, administrative buildings and residential areas. The legacy of mining is a part of the local identity and a development potential. Senj mine was supported by the European Union to become the first ecomuseum in Serbia, where cultural heritage will be used as a resource for local development, economic restructuring and the conservation of the environment.

In addition to industrial heritage, a considerable part of the cultural heritage of Serbia represents its traditional architecture, based on traditional craft skills and the use of natural materials. These are mainly buildings built at the turn of the 19th/20th century and can be found in Tršić and Sirogojno (where a museum of folk architecture with 40 wooden buildings is located). *Pimnica* is a temporary settlement at a vineyard made for storing wine and built of hewn stone and wood. Today it offers the tasting and selling of wine for tourists.

Building ecological image of the village – promotion of local economy and organic farming

Today's rising inequalities and future threats such as the over-exploitation of natural resources and the degradation of the environment indicate that modern civilization is developing in an unsustainable way (Pawlowski, 2010, 2012), and this is often regarded as a consequence of capitalism (Ikerd, 2008). In a time of capitalism, the emphasis is too often put on narrow self-interests and economic value. It weakens interpersonal relationships and cooperation. *When people buy things taking only into consideration price rather than buy from people they know and trust, personal relationships within communities suffer from neglect and their social capital is depleted* (Ikerd, 2008). Farming communities lose their economic, social, and cultural identities, and communities lose their ability to protect themselves from outside exploitation (Ikerd, 2008).

Until recently, a significant part of humanity depended only on the local economy, local production and the use of local resources. It was led and controlled by local communities and constituted a reflection of local culture. However, the prevailing centralized global model is based on the continuous expansion of production and consumption. In such a system goods are being transported over long distances which leads to the destruction of nature, homogenization of culture and the damaging of communities (Mander, Goldsmith, 2003). The processes of globalization transfer responsibilities from

² Lynch identity equates with the term *sense of place* understood as *identity is the extent to which a person can recognise or recall a place as being distinct from other places – as having a vivid, or unique, or at least a particular, character of its own* (Lynch, 1981).

³ Industrial heritage consists of the remains of industrial culture which have historical, social, architectural or scientific value. These remains can be industrial buildings, but also machinery, mines, infrastructure, housing and other buildings made for workers (TICCIH, 2003).

the individual and local to the global level, therefore often depersonalizing individuals and groups. In such a situation residents can feel powerless as they can no longer influence their own and their communities' lives as they used to. They lose self-confidence, which results in them feeling insecure, losing responsibility for their own territory and often poisoning the soil without being aware that they also endanger themselves by doing this (Barbič, 1997: 42).

Urbanization and centralization of the population are often recognized as a solution to overpopulation, for being more efficient and using less resources. Still, as Norberg-Hodge noticed (2003), when the costs of urbanization are considered more closely it becomes evident that big centralized systems use resources more intensively and are more harmful to the environment than smaller systems. Norberg-Hodge states that it is necessary to support development models based on the understanding of the diversity of environments and their unique conditions. It is necessary to support the remaining rural communities and farmers in order to rebuild and keep a strong economy. She believes that the long-term solution for today's social and environmental problems requires a large number of small and diverse local initiatives. Measures for the protection of rural households and small local businesses will be considered in the following section of the article.

Meyer and Burayidi (1991) argue that more services have to be available to local consumers within the rural community in order to retain more money within the community. Reliance on the local economy creates stable communities and protects nature. This was a critique of mainstream consumption patterns, and the alternative is a sustainable consumption. This model could be attained through so-called *simple living*, defined by Kronenberg and Iida (2011) as life-style choice that involves more thoughtful consumption complemented with spiritual development. Many organizations and individuals already work on strengthening communities and local economies, and in order to succeed in that policy changes at national and international levels are needed. More money could be invested in the construction of bicycle and walking paths which are ecological options and contribute to local development and the development of recreational activities. Also, using renewable energy would reduce pollution, ease the pressure of large-scale energy installations and reduce the dependence on oil. Subsidies and financing of large enterprises could be replaced by encouraging small-scale production that would help small producers in the villages. Similarly, the movement of ecological villages connects communities from around the world in order to create a more sustainable way of life. In all of these ways people are more able to stay in villages, to preserve

their cultural and personal identity and to contribute to the preservation of cultural diversity.

Initiatives such as *Buy local campaign*, *Community-supported agriculture - CSA*, *Subscription farming*, *Linking farmers with consumers*, *farmers markets and community gardens* help save the sense of community and preserve small economies through the prevention of the money outflow from local businesses. These innovations in agriculture link consumers with farmers to their mutual benefit. To understand this concept, it is necessary to explain that modern, industrial agriculture is based on the significant consumption of material and energy. It produces harmful substances and causes ecological problems. In the conventional food system in industrialized countries food is being transported over long distances before being used (for example, in the USA food travels 2,000 km on average before it becomes part of a meal). During this process, food goes through various procedures that affect its quality, and a lot of energy is spent on transport and waste is produced. Apart from that 25 % of food never reaches the table because it spoils during transport or in a store. Consumers therefore not only get food of lower quality but they also lose touch with the source of food and its producer. In the CSA system farmers and consumers are associated and the consumer pays a share in order to cover the farmers' costs for the upcoming season. By doing so, higher quality and pesticide-free seasonal organic food is produced at prices lower than market prices. This allows farmers to collect the working capital without paying interest, and it also serves as protection for them.

These kinds of new approaches to farming are called organic, biodynamic, holistic, bio-intensive, biological, ecological or permaculture (Ikerd, 2008). Sustainable agriculture is defined as the *successful management of resources for agriculture to satisfy changing human needs while maintaining or enhancing the quality of the environment and conserving natural resources* (FAO, 1989). *With sustainable agriculture being a form of sustainable development, it must be capable of meeting the needs of the present without compromising the future (...). Sustainable systems of farming must be ecologically sound, socially responsible, and economically viable* (Ikerd, 2008). In Western Europe, modern organic agriculture has been spreading gradually since the 1970s but early versions of it started to emerge in the 1920s. It is now accepted by society, governments, the European Union and numerous state and scientific institutions around the world as the most sustainable method of food production.

With good climate and soil conditions as a potential, Serbia can build an environmentally friendly image. East European farmers are able to participate in organic food production because it requires fewer financial investments than conventional pro-

duction (Oesterdiekhoff, 2003). Organic and ecological farming would pull the development of agro-eco-tourism and enable the revitalization of villages. As a result, supporting programs of organic agriculture would appear such as the production of organic seeds, pesticides, fertilizers, etc., and this will further affect the attraction of foreign capital and contribute to solving the unemployment problem. However, the undertaking of stimulative measures is needed by the Government along with the improvement of village infrastructure, the education of farmers and the establishing of farmers' associations, and basing agriculture on competitiveness.

Social Capital of rural areas and infrastructure development as factors of sustainable development

An important factor of rural development is the development of infrastructure. This would contribute to the improvement of economic conditions in villages, elimination of inequalities, improved access to the market and an increase in investments in villages. Infrastructure development is associated with the social aspect of life as it increases mobility and access to health care and schools. Infrastructure development involves greater access to knowledge, education, and information resources and can have a positive impact on gender equality, youth activities and civil initiatives. A bottom-up approach to rural development would mean involving the entire community in local development. The transfer of power from central to local levels enables civil society to participate more deeply in the decision making process and could contribute to greater efficiency in public management and the creation of better conditions for economic development (Milić, 2011). Construction of transport networks and the organization of public transport between villages and towns enables rural people to access the social infrastructure of cities, and this influences their choice to stay in villages. Community development, the development of educational institutions and volunteering in the village can have a similar function.

Conclusions

The paper considers the possibilities for the sustainable development of villages in Serbia. Suggestions are divided into several main topics that should illustrate possible directions for improving the status of the countryside. The importance of questions concerning the status of rural areas in Serbia is particularly important if we bear in mind that it is a predominantly rural country. It is shown that urbanization is not the best answer to rural issues and that economic development should involve the regeneration of villages based on the promotion and use of its potentials. This kind of development would not stop the depopulation of

rural areas but it would be an answer for it through the development of villages which are complementary to cities.

Policies of regional and rural development are linked and their objectives should be complementary and compatible. It is essential to establish interministerial and intersectoral collaboration. Sustainable regional development means focusing on areas outside the currently dominant vertical of Novi Sad-Belgrade-Niš.

In planning the development of rural areas, villages should be viewed as a potential, not as a problem, and in accordance with that their potentials should be used. Planning of rural development should focus on regional characteristics and values such as cultivating the tradition of the village and the development of rural tourism, the use of cultural heritage, creating the eco image of villages, the promotion of the local economy and sustainable forms of agriculture, and finally the use of the social capital of villages and infrastructure development. Implementation of these measures would contribute to the sustainability of the countryside in Serbia and countryside generally and to stopping the current negative trends associated with rural areas.

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Self-evaluation on the Way to Retardation of Pace Life and Resources Transformation

Samooocena na drodze retardacji tempa życia i przekształcania zasobów

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Abstract

It seems that the acceptance of retardation (slowing down) of both pace of life and transforming natural resources can play a positive role in building a sustainable reality. Building this new socio-economic order, in connection with the report on the state of ecosystem services in the Millennium Ecosystem Assessment, is both urgent and difficult, and requires new best practices to be created and used as a model.

This paper shows examples of opportunities allowing for contemplating one's own place in the surrounding reality and a way to make progress creating it.

Key words: retardation, sustainable development, education, self-evaluation

Streszczenie

Wydaje się, że akceptacja retardacji (spowalniania) tempa życia i przekształcania zasobów przyrody może odegrać pozytywną rolę w budowaniu rzeczywistości zrównoważonego rozwoju. Budowanie tego nowego ładu społeczno-ekonomicznego w związku z Raportem Milenijnym o stanie ekosystemów, jest jednocześnie sprawą pilną i trudną oraz wymaga tworzenia nowych dobrych praktyk (best practices) do wzajemnego naśladowania.

W pracy pokazano przykłady związane z rozważaniem na temat własnego miejsca w otaczającej rzeczywistości i sposób na pójście dalej w jej tworzeniu.

Słowa kluczowe: retardacja, zrównoważony rozwój, edukacja, autoprojekcja

Introduction

An open approach to education, acceptance of proposed innovative measures and willingness to continue searching for and creating new examples are the essential elements necessary for establishing the reality for sustainable development. It seems that the comprehensive programme for implementing the objectives of sustainable development should not only present new environmentally oriented techniques and technologies (Woźniak et al., 2008; Wnuk, 2010), or raise awareness of the necessity to regain confidence in ecosystem services (Kostecka, 2011), but also take into account retardation (slowing down) both in pace of life and in transforming natural resources against the widespread trends of consumerism (Kostecka, 2010; Poskrobko, 2010).

Surveys show that we often make sacrifices aimed at improving the quality of the environment if we are aware of its condition (Kostecka, Mazur, 2007), therefore it is a worthwhile effort to use various opportunities for disseminating information and solid facts concerning the degradation of the natural environment in the 21st century (Skubała, 2008; Ogrodnik et al., 2010).

The change involving societies and organizations at the local, regional and global scale may occur by leaps (in a revolutionary manner) or by small steps (which does not necessarily imply excessively slow pace). Yet, the necessity of such change must be acknowledged by as many social groups as possible.

This article describes a method of diagnosing one's own approval of activities performed by those con-

tributing to the reality of sustainable development and highlights the process of slowing down the pace of life and decelerating transformation of natural resources and ecosystem services. Diagnosing one's own attitude to enabling sustainable development may serve as an encouragement for further investigation and progress in accepting sacrifices allowing for decelerating the transformation of the world.

Understanding of the term *retardation*

The term *retardation* (slowing down) may have various and very broad meanings and applications. In literary rhetoric the term may refer to slowing down the plot to increase the effect of suspense in the audience/readers. In philosophy, Dołęga (2010) links the term with the *Catechism of the Catholic Church*, Aristotle's moderation and the concept of *happy medium*.

Kostecka (2010, 2013), Poskrobko (2010) and Janikowski (2013) make reference to *retardation* as an element of the responsible process of constructing the paradigm for sustainable development.

We can also talk about *slowing down* in the biological sphere where retardation should be considered jointly with the processes of the development of organisms in their habitats, and with regard to humans, e.g. in the contexts of the dynamic growth of mankind. Hence, in the biological sense the term *retardation* will allow for describing behaviours of living populations within their natural environments; behaviours which are also accompanied by other environmental mechanisms regulating the size of specific populations or a delayed development of certain organs by some organisms.

The biological significance of the term *retardation* may be perceived by some people as negative since it indicates some developmental delay, although for the entirety of the ecosystem (the biosphere) in fact it may be *important in a positive way* since the phenomenon hinders the speed of disorganization and destruction, and on the other hand also the evolution, and the accompanying degradation connected with the exploitation of natural resources; that in turn may help ecosystems and ecosystem services to be regenerated in a natural manner.

The concept of retardation, defined as a delay aimed at retaining balance and harmony in the environment, may lead to the rise of new concepts contributing to increased awareness and cultivation of sustainable development, yet only up to a certain limit and within identified environmental, social and economic conditions. The application of retardation will mean a consent to imitate nature by using man-made rules (adjusted by culture and awareness), and in a way *getting ahead of* the responses of nature which in fact has its own mechanisms unconditionally enforcing retardation, including enforced extinction events.

Hence, the practical application of retardation should be researched carefully due to the fact that, just like in some cases of biological conditioning, retardation may decrease the flexibility of organisms and entire populations of a given species in order to rapidly and adequately adjust to sudden changes in their living conditions in the environment. When it comes to the relation to the social and cultural organization of the life of *Homo sapiens* it may lead to disorganization and hazardous turbulences.

While promoting retardation in both the pace of life and adverse changes in services provided to humans by ecosystems, we should pay attention to the double-edged character of biological and social retardation processes and take into account the cultural dimension of the human race, which is able to manipulate *this phenomenon* in an intelligent way without losing adaptive flexibility.

The standards and values constituting the core of sustainable development seem to be historically inherent in human culture, yet it is believed that education for sustainable development (including retardation) continues to be necessary. Furthermore, the assimilation of up-to-date knowledge of sustainability will be enabled by appropriate policies adopted by local, regional and national authorities and by the widespread involvement of society in the processes aimed at organizing reality and in co-governance. Other dilemmas related to the concept of retardation of both lifestyles and resource transformation are discussed by Kistowski (2010) and Kostecka (2013).

Human beings in the reality of the 21st century

Just like the entire life of contemporary humans, their education takes place more rapidly and superficially. Educational standards develop less and less effective foundations for socially and environmentally oriented behaviours of the young generation. Yet in fact these foundations should combine young people's knowledge, world view, sensitivity, emotions and abilities to act. Youngsters should be able to recognize them within themselves and in their surroundings, as well as counteract alienation from both Nature, and society as well as self-estrangement.

The essential function of education is to prepare young people for adult life in accordance with binding rules and principles governing society. In modern times there is a need to acquire adequate knowledge and skills which allow for coping with daily life and for refusing to conform slavishly to various social trends, such as ever growing consumerism.

The modern society is diagnosed by Fromm (1996) who claims that it is characterized by a lack of respect for the laws of nature that mankind is part of. He also says that many people operate and feel as if they were machines losing touch with human

attributes such as pain and suffering. We do not experience pain because we dissociate from it by using numerous pharmaceutical agents; we work focusing on expected profits rather than on circumstances supporting growth of interests, friendships and the possibilities of joint fascination with the work we are creating. Relationships with other people, established in a hurry, are in fact a surrogate for truly being with someone (Kulik, 2012). Moreover, it seems that in spite of the growing focus on one's body, contemporary people have a decreasing ability to recognize their organisms' needs and limitations. It has been commonly assumed that a beautiful body is to provide services for our enjoyment as long as possible, therefore we want to gain control over it enhancing its selected functions without end. We consume stimulating substances, apply cosmetics to excess yet we neglect that which our body really needs (e.g. movement and exercise, harmony with our psyche for the acceptance of wrinkles as the symptoms of the natural process of aging).

Does such contact with the outer world provide us with real peace and happiness? Apparently people today are happier than in the past since they can afford more comfort and pleasures.

The main hypothesis of *Growth Fetish*, a book by Hamilton (2003) is that for years we have been made to believe various things. We are told that the greater our income the happier we will feel, and therefore economic growth means better life for us. Yet, after years of consistent growth we find ourselves less happy than years ago, and roots of most pathologies occurring in wealthy societies can in fact be found in affluence.

According to Toffler (1999) the recently increased pace of civilization growth greatly contributes to immense adaptive difficulties faced by people, and the tragic effects of excessively burdened human organism are manifested by frequently experienced irritation, exhaustion, disorientation, loss of ability to take decisions, as well as aggressiveness or deep apathy. The massive incidence of such phenomena shows that these are not merely isolated disorders experienced by individuals but a gradually progressing illness of the entire society.

Many people prove that happiness only to a degree is conditioned by external factors. If we take into account for instance the level of income or material affluence it turns out that the sense of happiness grows with increasing income only to a certain point. Individuals living in extreme poverty usually feel significantly less happy and with an increase in income their happiness grows. However, this continues only to the point when the person's essential needs are met (related to physiology, safety, love and belonging, respect and recognition, fulfilment). When income continues to grow the sense of happiness does not increase. This correlation clearly shows that money is important to us, yet our sense

of well-being is mainly affected by its lack or clearly insufficient amount of it (Ogrodnik et al., 2010). We can develop the sense of happiness and well-being by changing priorities from the main trend to the deceleration trend (Table 1). Indeed, ancient sages claimed that happiness does not belong to the one that owns more but to the one that needs less.

Table 1. The characteristics of the currently dominant system and the alternative ecology-oriented trend of decelerating resource transformation. Adapted from Ogrodnik et al., 2010.

Characteristics of the <i>main trend</i>	Elements of the <i>deceleration trend</i>
Independence.	Dependence on other people and the environment.
Affluence – unrestrained consumption.	Moderation.
Personal growth by all means.	Well-being without material growth.
Modern technologies.	Simple and modest means, trust towards nature and ecosystem services.
Individualism.	Common good (communitarianism), civic attitude.
Competition.	Cooperation.
Minimization of suffering, maximization of pleasure.	Acceptance of life that is good enough.
Dissatisfaction with that which is.	Satisfaction with that which is.
Mobility.	Acceptance for staying in one place.
Anthropocentrism.	Biocentrism.

At this point, it is a good idea to remember the organization of the closed Amish community (following the rules of Protestantism and living in the USA for centuries), for whom time seemingly has stopped: they do not use electricity, cars, computers or telephones. They work in agriculture and crafts and are able to retain economic independence from the external world. They are a living proof for the existence of such principles of social life which are not burdened with the dogma of the continuous material growth. Yet, are they happy leading this kind of life? Interestingly, they are the only group in America without growing incidence of unipolar depression, which seems to be a disorder typically related to living in a toxic society.

Are there any other reasons for slowing down the pace of life and decelerating transformation of natural resources? Given the fact that according to the *Synthetic Millennium Ecosystem Assessment* 2/3 of functions (services) performed by the world's ecosystems have been degraded and the remaining ecosystems are not used in conformity with the criteria of sustainable development, it seems that the primary challenge for the nearest future involves deceleration in both the pace of life and transforming biodiversity, as well as protection of their services for humans.

Encouraging self-evaluation and approval for slowing down the pace of life and ecosystem transformation

Do we think about elements of our world view, our responses and our philosophy of life on a daily basis? What is our attitude to those whose opinions differ from the generally accepted views? The latter question may be posed for instance to a group of students during a discussion based on the article entitled *Ecoists*, which was published in the Polish edition of *Newsweek* in 2007. The text presented during classes in ecophilosophy initially is met with negative response. Students mostly do not relate to ecoists at all, and to a degree perceive their behaviour as aggressive.

Before the discussion students read the text individually, and then work in groups consisting of 3 or 4 people and look for possibly most detailed examples of activities accepted by ecoists (Table 2). The students working in each group take turns reading aloud each identified activity, and allow others to supplement/add elements which they have failed to notice. This is a very important stage and it is essential that everyone names as many initiatives undertaken by ecoists as possible. This part may be organized as a competition for the groups to identify the largest number of elements in ecoists' life. This is like climbing up the stairs – the higher we go the more we can see along the way and the further we can proceed taking the effort to contribute others idea (of our own) aimed at decelerating the transformation of ecosystem services.

The next task for those working in the groups is to perform an assessment individually, by assigning + or – to each of the listed behaviours. Plus (+) is assigned by those who could adopt a similar behaviour, and minus (–) means that a proposal is impossible for them to accept. In course of a free discussion the students sum up the pluses and minuses assigned by the members of the group and they make a list of the most and the least acceptable ecoists' choices. Where the timing of the classes allows it is possible to establish a detailed ranking of all the specified ecoists' proposals aimed at slowing down the pace of life and the transformations in the social, economic and ecological environment (Table 2).

Which element of this exercise is the most important from the point of view of our personal efforts aimed at building the reality of sustainable development and looking for ideas to decelerate the pace of life and transformation of ecosystems and biodiversity?

This may be the next task given to the students: while working together and sharing ideas (brainstorming) they consider the effects of ecoists' measures which are least acceptable to them (as well as the most acceptable ones if time allows). In order to consolidate the understanding of the con-

cept of sustainable development the evaluation of effects should take into account social, ecological and economic aspects. The following Tables (Table 3A-C and Table 4) show sample responses provided by students.

Table 2. Task sheet: measures used by ecoists and identified in the text entitled *Ecoists* by a sample group consisting of 3 students, and self-evaluated acceptance for the measures. Source: Author's own work.

Measure	Acceptance		
Using an ecological (e.g. linen) bag	+	–	+
Waste sorting	+	+	+
Reducing water consumption	+	–	+
Saving electricity	+	+	+
Reusing bottles, containers (e.g. made of glass)	+	–	+
Acquiring consumer knowledge of a product	+	–	+
Informed shopping, e.g. in conformity with fair trade rules	+	–	+
Using public means of transport rather than car	+	–	+
Consistent refusal for getting a lift by car (I'd rather wait for a bus or a subway train)	+	–	–
Purchasing food from local producers	+	–	+
Buying fewer exotic fruit in conformity with the food miles rule, which says that products should travel the shortest possible distance from producer to consumer	+	–	–
Reduced heating at home in winter and wearing warmer clothes instead	+	–	+
Purchasing hybrid vehicles	–	–	–
Eco-driving (e.g. downshifting)	+	–	+
Using recycled paper	+	–	+
Buying fewer clothes	+	–	–
Exchange party	+	–	–
Storing food in root cellars rather than in refrigerators	–	–	–
Using cloth diapers	+	–	–
Choosing products in recyclable packaging	+	+	–
Refraining from using toothpaste with fluoride	+	–	–
Cold shower	+	–	–
Using empty beverage cans as decorations	+	–	–
Getting rid of unnecessary load in car boot	+	–	–
Opting for sustainable fashion	+	–	–
Avoiding disposable products	+	+	+
Selecting ecological cycle in the washing machine	–	–	–
<i>Walking bus</i>	+	–	–
Purchasing products with <i>organic</i> or <i>bio</i> label	+	–	–
Carpooling to work	+	–	+

self-evaluation by assigning + or – to each behaviour; plus is assigned by those who could adopt a similar behaviour, and minus means the proposal is impossible to accept

Table 3. Examples of students' assessment of the least acceptable measures used by ecoists in terms of their impact on decelerating the transformation of resources. Source: Author's own work.

<i>Best practice A: Change party</i> (an event aimed at exchanging clothes)			
	Ecological effects	Social effects	Economic effects
+	using clothes for a long time allows for saving ecosystem services, reducing consumption of raw materials and decelerating environmental pollution	social meetings and contacts; discussions and sharing ideas and experiences; changing the conviction that evaluation of my person depends on what I am wearing; on a deeper level a sense of participation in a phenomenon decelerating the loss of biodiversity	decreased expenditure related to clothing; possibility to designate the savings to another purpose, e.g. culture
-	-	consequences related to unsettling the market and decreasing employment by apparel retailers; hazard of disease transmission	necessity to balance lower turnover obtained by apparel manufacturers and retailers
<i>Best practice B: Selecting ecological cycle in the washing machine</i>			
	Ecological effects	Social effects	Economic effects
+	decreased consumption of electricity, detergents, water; lower pollution of reservoirs receiving sewage; support for ecosystem services	savings	quicker exchange of clothes into new ones
-	-	perhaps inadequately washed clothes?	-

<i>Best practice C: Giving up refrigerators</i> (using root cellars)			
	Ecological effects	Social effects	Economic effects
+	energy savings; no freon emissions to the atmosphere; support for ecosystem services	return to the taste of food from grandmother's times and to natural methods of food preservation; perhaps also return to less heavily processed food?	savings on purchasing refrigerator; this might be an attractive element of agritourist services?
-	-	such cellar is not available for everyone; more time-consuming; decreased employment by refrigerator manufacturers	stale food? a need to repurchase the goods?; lower sales of refrigerators

Table 4. Assessment of impacts caused by one of the most frequently accepted ecoists' measures; *Best practice: Waste sorting*. Source: Author's own work.

	Ecological Effects	Social effects	Economic effects
+	no need to expand landfills and acquire new land for that purpose; reduced environmental pollution, decreased risk of its degradation, reduced consumption of raw materials; support for ecosystem services	building ecological awareness and attitudes; satisfaction caused by supporting nature; prospects for less polluted environment for ourselves and the future generation	possibility to reuse materials without the costly process of obtaining primary resources; savings resulting from preventive measures aimed at protecting ecosystem services, savings due to indirect protection of human health
-	-	-	sometimes additional costs related to purifying recyclable waste; development of new technologies

Clearly, they are not very sophisticated. In fact some responses may even indicate the lack of familiarity with the topic, yet it should be emphasized that knowledge which could be helpful in performing the evaluation is currently subject to extensive remodelling. To document this, another issue *what should we eat to save the Earth* may be considered (Focus, 2008).

Research conducted in the USA has shown that food products consumed in an average household leave *carbon footprint* equal to 8.1 tons of carbon dioxide per year. This is nearly twice as much as CO₂ emissions from cars amounting to 4.4 tons (with the assumed average annual driving distance of 19,000 km and fuel consumption of 9 l/100 km). Due to this, scientists started calculating emissions of greenhouse gases generated by food production. Owing to their findings we can make an attempt to decide what to eat, so that we can protect our Planet. Yet, the calculation of the *carbon footprint* of consumed food is not easy. The analysis should include each joule of energy, taking into account everything, from the farming field to the fork used during a meal, summing up all greenhouse gases emitted at each stage of production and consumption.

In the case of meat and dairy products we should also take into account methane and nitrogen oxide, remembering also that methane remains in the atmosphere for 9 to 15 years and retains heat 21 times more effectively than carbon dioxide (Focus, 2008). In order to examine the environmental impact of chicken breast lying on our plate and originating from an industrial poultry farm we must consider various factors: feed production (i.e. cost of fertilizers, cultivating and harvesting grain and processing it into a form in which it is served to chickens staying in halls housing up to a quarter of a million birds), costs of heating the building as well as fuel used while transporting the chickens to the abattoir, greenhouse gases generated by the processing plant and packaging manufacture. It is necessary to add the costs of transport to a warehouse, cold storage of meat, delivery to the shop, and costs of chilling the product inside meat counters. A carbon footprint is also generated by the consumer who must reach the store to buy the chicken, then travel back home and cook it.

Chicken is a relatively trivial and simple example – it is much more difficult to calculate CO₂ production during more complex manufacturing processes. Yet, it is not impossible. In his book entitled *Ecological Intelligence*, Goleman (2009) writes about the rise of a new discipline called industrial ecology. It exists at the cusp where chemistry, physics and engineering meet ecology and integrates those fields to quantify the impacts of manmade things on nature. This science focuses on topics as diverse as estimating CO₂ emissions resulting from every industrial process, analyzing the global flow of

phosphorous, the possibility to streamline recycling of waste as a result of electronic tagging of goods, and the ecological consequences of a trend for designer bathrooms in Denmark.

The end of the classes is usually satisfying for the teacher, since it turns out that what was previously unfamiliar, therefore rejected by the students, after a closer look turns out important and useful, and that leads to a conclusions that *perhaps I could also try and climb some stairs towards sustainable development? Actually, I do have an idea how ecosystem services could be preserved in some other way* (Fig. 1).

The following exemplary ideas for specific steps towards sustainability were provided by students:

along the social stairs

- organization of volunteers to work on encouraging neglected children to decelerate the pace of life;
- organizing occasions for three generations (grandparents, parents and grandchildren) to stay together for leisure time, e.g. at weekends;
- organizing occasions for further discussions concerning the topic of retardation;
- slowing down one's own pace of life and organizing volunteers to provide aid for elderly people.

along the ecological stairs

- organizing occasions for showing the state of ecosystems to family and friends;
- giving up one TV set at home and donating it to people in need;
- organization of carpooling to university for a group of students;
- organization of a discussion club.

along the economic stairs

- organizing neighbourhood groups aimed at providing free-of-charge support (joint rental of washing machine, shopping for the whole group, based on shopping list and using one car, etc.);
- designing a project aimed at raising funds for the installation of bicycle stands in front of the university.

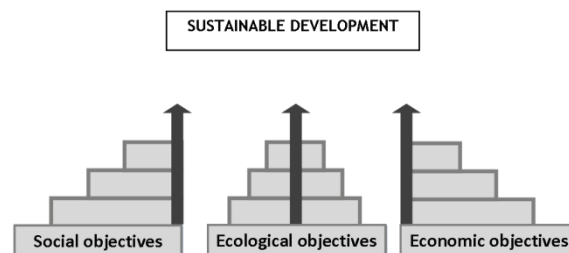


Figure 1. The road towards sustainability (compiled by the author).

The presented exercise may evolve from the introductory phase of the idea, as described here, to include more complex elements of a well-designed programme, verified by daily practice and experience. Interestingly, on this occasion young people *discover* and accept the significance and pleasure of volunteering and involvement in community work, as well as taking a break on one's own or in a group to appreciate the beauty of the nearby ecosystems. Some ideas are classified in a few categories: along the social as well as ecological and economic stairs. Indeed, it is easy to identify the three planes of interaction, e.g. when rather than spend time at a quad track one chooses a bike trip with friends. This sport is more beneficial for both the biker's health and the natural environment (so it is possible to identify social, ecological and economic advantages). Similarly, joint effects may be identified in an idea: *let's organize facilities for exercising along the trail in the nearby park*.

Auto-projection of future with the decelerated pace of life and transformation of ecosystems

Slowing down the pace of life and decelerating transformation of resources seems to be an important tool for the implementation of a new approach to the still existing natural assets and services of the environment. Aimed at implementing retardation, environmental education should apply activity-based methods and be understood broadly (as related to the natural, social and economic environment); it should serve the participatory society which is in need of regained holistic perception of itself and the world (Kostecka, 2013).

Education is a process of adapting to the broadly understood environment. In this case the concept of the environment, in addition to the natural also comprises the hierarchical social environment (family, school, local community, etc.) as well as the cultural and economic environment. Occasions for auto-projection of one's own better life in the future are also provided by other events. One of these is the tradition of Christmas Eve which involves doing something good, in a better and more efficient way, as well as making a promise to ourselves that we will stand up and fight with the daily routine. We make a promise to ourselves and we believe for instance that if we get up earlier on that day, pay back all debts, and smile to one another then we will manage to get up early throughout the year, we will not live beyond our means and will have a peaceful attitude towards the whole world. Some of these resolutions come true, therefore it is worth planning a lot and hoping that many of such plans will be achieved. Perhaps it would be possible to come up with resolutions which would facilitate the process of building a reality of sustainable development through decelerating both pace of our life and ecosystem transformation?

Other authors propose similar ideas. Kulik (2011) claims that true wealth means the ability to be happy with that which one has, and he continues to say that once we cross the threshold of objective poverty (400 USD monthly per person) we have ensured conditions allowing us to attain the maximum level of happiness. This standard of life is good both for us and for the natural environment. Kronenberg and Lida (2011) indicate that introducing sustainable development may support simple life and suggest that philosophical reflection is the essential element of simple life. Deliberations focusing on slowing down the pace of life and decelerating transformation of ecosystem services, as well as concerning related limitations, dilemmas and methods of implementation may enrich the current debate on sustainable consumption (Kostecka 2013).

The exercise described earlier can be based on different texts. One of the possible choices is the following fragment, which is a part of a longer text written by Ryszard Kulik (2011).

These tips provide an encouragement to gradually adopt specific behaviours, starting with the easiest and most accessible at a given time and leading to those which require greater sacrifices, and are aimed at slowing down the transformation of ecosystem services.

That is what we can do in order to express in practice our concern for ourselves, other people and the Earth:

- ✓ Choose a simple lifestyle. Reduce your expenses by giving up things which you do not need.
- ✓ Make a list of essential expenses, crossing out the unnecessary ones.
- ✓ Avoid visits to supermarkets as a means to kill time or a source of entertainment; just spend time with family and friends and talk about important issues.
- ✓ Buy small quantities, buy local; identify local manufacturers and suppliers, contact them, and learn how they process products which find their way to your table.
- ✓ Choose a job which is an affirmation of life. Follow your values which are based on thinking about our common good, about the Earth and sustainable development.
- ✓ Avoid work which destroys you and others physically and emotionally.
- ✓ Be interested in your local community, its problems and issues. Read local and alternative newspapers and magazines, and treat corporate mass media with reserve.
- ✓ Deposit your money in a local bank or credit union which works for the benefit of your community.
- ✓ Develop a system of time banking in your community and settle accounts with various people without using money.

- ✓ Reduce your dependence on your car. While choosing places to live and work check if the distance between them can be covered on foot, by bike or by means of public transport. Follow the same policy with regard to shopping and leisure activities.
- ✓ Choose sustainable forms of leisure: take walks, go jogging, and organize bike trips to visit the nearby area.
- ✓ Find out about local authors and artists; contribute to organizing events for them and support their work.
- ✓ Share your artistic abilities with your local community; organize a photography exhibition, poetry reading or music concert.
- ✓ Establish an association working for your local community or the local natural environment.
- ✓ Rather than spend hours in front of a TV set or online, meet your neighbours.
- ✓ Balance the time of work with the time of leisure (possibly – active recreation in the company of your family).
- ✓ Stay close to your loved ones, keep up friendships.
- ✓ Do not hurry, eat slowly and enjoy each moment (Kulik 2012).

We all experience a lot of first (new) phases in our lives. If we are unsure which way to go we feel anxious, worried or we experience internal conflicts. Yet, if we want to follow the path towards sustainability we must make an effort and take risk. More and more people notice that in highly industrialized countries energy dissipation has reached such level that costs of non-productive operations (maintenance, management, treatment, etc.) consume a bigger and bigger part of GDP. It is believed the way out of this trap will be a low-entropy world where economy is based on entirely different principles than today. Low-entropy civilization makes use of dispersed solar energy. Yet, its application is significantly more difficult than in the case of solar energy concentrated in traditional resources. Therefore it is assumed that the new world will consist of small communities, which to a great extent will be self-sufficient and where work performed by human hands will be the essential value. Possibly, the sophisticated technologies will pass away along with the old world and people will have to learn to live a slow-paced, more modest, economical and simple life resulting in less chaos and allowing to protect the still existing ecosystem services (Ogrodnik et al., 2010).

In the new phase of development, called *humanism for tomorrow* human growth will no longer involve activities which lead to breaking the bond with or dominating/conquering Nature, but will require diligent process of redefining the pact with Nature, and that may be enabled by sustainable and balanced development (Piątek, 2011).

One of its elements should involve retardation of resource transformation. This issue should not remain at the periphery of the educational process, but on the contrary it should constitute its underlying principle and provide support for educators, teachers of history and sciences, as well as psychologists.

Our planet cannot bear the load of our whimsies and demand for luxurious life. Psychological mechanisms related to the sense of happiness show that majority of those living in affluent countries, have already acquired everything necessary for life that is sufficiently rewarding and happy. If our personal feeling says otherwise, it means that we have been pulled into a dangerous game which adds impetus to spiralling expectations and ultimately leads to personal and global disaster (Kulik, 2011).

Because nature has developed mechanisms for eliminating negative phenomena, including harmful effects of most chemical compounds occurring within it, and performs this function through ecosystem services, people must urgently consider measures to protect these services. Even though as a result of developments in techniques and technologies, particularly environmental engineering, it is possible to eliminate many hazards originating from pollution (by intensifying natural self-purification processes which are an integral part of natural carbon and nitrogen cycles), due to high costs, as well as lack of willingness, degradation of ecosystems continues and some areas approach the state of irreversible devastation (Pawłowski, Pawłowski, 2008).

Hence, it is necessary to design and initiate measures aimed at shaping attitudes which will ensure the implementation of sustainable development and protection of ecosystem services (e.g. by slowing down the pace of life and decelerating transformation of nature).

Conclusions

The teaching method described here may be applied in educational practice. By providing an aid in identifying one's place in creating fragments of one's reality it can encourage participants **to take further steps towards sustainability** and slowing down the pace of life. It can be used during classes in social studies in middle and secondary schools, as well as during classes in eco-philosophy, sustainable development and responsible business at university level.

The presented idea should be used jointly with activity-based methods of education: case study, discussion or brainstorming. Activating methods by themselves are attractive and participants are more willing to get involved in such tasks. We can hope that it will allow for deeper understanding of the rules of sustainable development, including acceptance for the difficult, controversial and multi-

faceted concept of retardation of pace of life and slowing down the transformations in natural resources.

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Eco-innovation as a Factor of Sustainable Development

Ekoinnowacje jako czynnik zrównoważonego rozwoju

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Abstract

The article discusses the role of eco-innovations in sustainable development. The first part of the paper pertains to the essence and meaning of sustainable development, with a particular attention paid to the technical dimension. Then a qualitative model of eco-innovations, which are the main factor of green growth, is introduced. The last part of the article contains the analysis of the results of CIS 2008 survey in relation to the propensity and motivations to introduce the eco-innovations, as well as the benefits from the introduction of the eco-innovations in enterprises from EU countries.

Key words: innovations, green growth, environment, environmental protection

Streszczenie

W artykule omówiono rolę ekoinnowacji w zrównoważonym rozwoju. W pierwszej części opracowania przedstawiono istotę i sens zrównoważonego rozwoju, ze szczególnym uwzględnieniem wymiaru technicznego. Następnie przedstawiono jakościowy model ekoinnowacji stanowiących główny czynnik zielonego wzrostu. W ostatniej części artykułu przeprowadzono analizę wyników badań – CIS 2008 w zakresie skłonności, przesłanek i korzyści z wprowadzania ekoinnowacji w przedsiębiorstwach z krajów UE.

Słowa kluczowe: innowacje, zielony wzrost, środowisko naturalne, ochrona środowiska

Introduction

Problems concerning the role of innovations favoring the environment (eco-innovations) in sustainable growth are a subject of an interest for the scientific community and public authorities (Smith, 2009; Newell, 2010; Dangelico, Pujari, 2010, *Towards...*, 2011; *Fostering...*, 2011). The special significance of eco-innovations in the solution of development problems at the edge of the economy and environment results from the fact that eco-innovations are integral elements of the knowledge-based economy – KBE, since they enable partial replacement of material inputs with knowledge capital, meaning that enterprises and economies become more effective, and thus use fewer resources for added value unit manufacturing (*relative decoupling*) or maintenance of the level of resource utilization and influence on the environ-

ment at a stable or decreasing level with a constant economy growth (*absolute decoupling*). It may be concluded, in European terms, that environmentally friendly innovations belong to the concept of coupling agent in a strategies of sustainable development, i.e. those based on knowledge and innovations.

Despite the indisputable potential of eco-innovations for the generation of new growth sources, there are significant barriers to the development and diffusion of new pro-environmental solutions of a demand and supply character (Johnson, Lybecker, 2009; Jaffe, Stavins, 1995; Nijkamp, Rodenburg, Verhoeft, 2001). The fact that those market forces do not provide either sufficient support for the creation and absorption of eco-innovations thus justifying the need for public intervention, during the planning and realization of environmental policy, or innovative (technological)

policy is made difficult by the occurrence of externalities (Popp, Newell, Jaffe, 2010). In the case of eco-innovations, externalities result first of all from the character of knowledge which is a public good, and from the difficulty in internalization of the negative environmental effects of economic activity (Jaffe, Newell, Stavins, 2005). Thus, selection of a suitable set of eco-innovation policy tools and their proper coordination in order to assure sustainable development remains an open issue.

Considerations on the nature and meaning of sustainable development

According to the most recent study conducted by scientists from the University of Belgrade, the most advanced countries in terms of sustainable growth implementation are Sweden and Denmark. New members of the EU, countries such as Latvia, Hungary, Estonia, Lithuania and Slovakia, are at the opposite end of this hierarchy. Poland is situated in the middle of the group, preceding, inter alia, Austria, Italy and France (Radojicic et al., 2012).

In the realization of ecological policy Poland has accepted a strategy of sustainable development according to which environmental protection is an element of good management and may be treated as being in conflict with economic affairs, and each activity contravening this order is considered as illegal. An aim of this idea is to prevent, or at least, limit an imbalance between economic and social growth, and also between social-economic development and the natural environment (Kasztelan, 2010).

Sztumski claims that economic affairs still predominate over ecological ones but there is a clear tendency that ecology plays an increasing role in various areas of life, including economic activity. In an increasingly degraded environment, increasing number of people have become aware of the dramatic results of ecological threats and have been seriously worried about their future. The economy will always be the basis of social relations; however, the rules of economy will not be the only determinant of these relations. Economists are more and more aware of the ecologist's opinion, the economics of the needs of the environment and the protection of human life (Sztumski, 2009).

Definitely more critical opinions in this range are presented by Pawłowski, who claims that the modern world is not developing in a sustainable manner. The current generation seems to be living at the cost of the future generations, and the current direction of human civilizational development simply prevents poverty reduction due to the Earth's limited resources. The need for the prevention of excessive consumption induced by artificial needs created by *omnipresent, impudent advertisements* has become a key issue. Pawłowski puts a question of whether adverts should not be banned at the first

stage of the realization of sustainable development (Pawłowski L., 2010).

The following dimensions of sustainable development in the European Union have been established in the *Amended Gothenburg Protocol*:

- environmental dimension: environmental protection – including: protection of life support systems, assurance of biodiversity, maintenance of high levels of environmental protection and its qualitative improvement, limitation of pollution, promotion of sustainable consumption and production;
- social dimension: social equality and integrity – incorporating a democratic, coherent, healthy, safe and just society; respecting basic human rights, cultural diversity; an equitable society and the fight against all forms of discrimination;
- economic dimension: welfare economics – pro-development, innovative, knowledge-based, competitive and eco-effective, assuring high living standards and full employment in the whole European Union (Review of the EU..., 2006).

The multidimensionality of sustainable development is emphasized by Pawłowski in his discussion, which presents the above mentioned classification widened to ethical, technical, legal and political levels. He also creates a hierarchy indicating the leading role of the ethical dimension (Pawłowski A., 2009).

The existing social order depends on the level of economic development, while the economy is to some degree dependent on the resources of the natural environment and the manner of their exploitation. Real human progress cannot be expected when human activity is ecologically unsustainable. Moreover, it is not possible to implement stable activity practices, when the general social welfare level is subject to a decrease.

The interrelation of stability and development suggests the existence of an optimum scale of human activity, referred to as the optimum macroeconomic scale, which is almost entirely omitted in the debate on sustainable development. It is possible to achieve this optimum when the physical level of an activity on a macroeconomic level and the qualitative character of capital created maximize the sustainable economic welfare of the nation, or more precisely, balance the net profits resulting from economic activity.

Logically, due to the need for acting in a sustainable way, macroeconomic scale needs to be a balanced scale. However, the maximal sustainable level of an activity does not have to be an optimal level, since it is demonstrated that stability is a necessary but insufficient condition for achieving the optimum.

Unfortunately, most observers propagating the idea of a limitation of national economic increase base

this argument mainly on ecological factors, and rarely on the concept that such an increase would be existentially undesirable. This is a pity for two reasons. Firstly, it is obvious that the need for the restriction of the physical expansion of macroeconomic systems, usually limited to arguments for sustainable development (*means-based arguments*), also concerns traditionally perceived development (*ends-based arguments*). Secondly, since the costs of non-sustainable activities will be to a high degree borne by future generations, the probability of the realization of proper reforms will be higher, the present generation will sooner understand the negative consequences of forced growth strategies.

In particular, two issues seem to be essential for achieving sustainable development on a global scale. The first is the fight against poverty. This is not only a problem of moral imperative but also a condition essential for human development, given that higher level needs cannot be met without the prior meeting of lower level basic needs.

The second problem concerning the way of achieving sustainability is the control of population growth. On the one hand, taking into account the fact that all human development is dependent on a fair allocation of capital per inhabitant, a higher population means the need for gathering suitably higher capital resources. Increasing capital accumulation may finally lead to the natural ability of eco-sphere for self-restoration to be exceeded (Lawn, 2001). On the other hand, however, the problem of the control of population growth cannot be applied to Europe, a fortiori to Poland, since one of the still unsolved difficulties is the problem of low demographic growth and ageing societies in Europe. In such a situation, there is the need for a change in European demographic policy, which should lead to an increase in the quantitative and qualitative state of the population, which may be an antidote to negative economic consequences of ageing and depopulation processes in Europe.

Despite unprecedented economic growth, the world has started on a course leading to the depletion of resources and serious social crises and traditional methods of problem solving appear to be insufficient. Something must change in the philosophy of development, if society wants to reverse these negative tendencies. Albert Einstein wrote: *Today problems will not be solved, if 'we still' think in the way prevailing at the moment these problems occurred.*

Long-term stability and social prosperity are based on healthy and efficient populations. Societies functioning in conditions of anxiety, poverty and disease will not be capable of long-term development: social prosperity and economic prosperity are in a symbiosis, and the whole *game* depends on the healthy biosphere we exist in (Strange, Bayley, 2008).

Examining the reasons for the current situation, it should be emphasized that only the development of industry and the service sector have become direct determinants of change. Therefore, the technical dimension is a very important aspect in the implementation of sustainable development.

Innovations may help in the realization of environmental goals in a less costly manner, and thus contribute to developmental sustainability. For example, some innovations may lower the costs of decreasing environmental pollution, which in turn favors an increase in social prosperity. The same quality of an environment may be reached with lower engagement of production factors aimed at pollution reduction. On the other hand, the environment quality may be improved with the same amount of production outlay.

The role of eco-innovations in green growth theory

The eco-innovation concept appeared in the 1990s and was introduced, for the first time, to environmental economics nomenclature by C. Fussler and P. James in their book *Driving Eco-Innovation: A Breakthrough Discipline for Innovation and Sustainability* (Fussler, James, 1996). The authors defined eco-innovations using alternatively the terms sustainable innovations, as new products and processes creating value for enterprises and clients, and reducing (negative) environmental effects.

A similar definition to the above mentioned was introduced by R. Kemp and P. Pearson who accepted that eco-innovations are production, accommodation, and utilization of product, process, service or management method which are new for the enterprise, and which during their life cycle allow for a reduction in the risk of environmental pollution or other negative effects of resource use, when compared to alternate applications (Kemp, Pearson, 2008).

In turn, according to the position of the European Commission, eco-innovation is a new or substantially improved product (manufacture or service), process, organization or marketing method, which reduces negative influences on an environment and/or optimize the use of resources (*Better...*, 2011).

Given the presented approaches for the definition of innovations beneficial for the environment, three dimensions of the analysis of the eco-innovative activity of market entities may be distinguished, namely:

1. Target: selection of subject range of eco-innovations, i.e. product, process, marketing or organizational method, institution.
2. Mechanism: way in which the aims are realized, i.e. 1) modifications in the form of small adjustments in the product or process, 2) re-design involving considerable

changes in existing products, processes, organizational methods, 3) introduction of substitutes for previously offered products or services, 4) design and implementation of entirely new products, processes or organizational and marketing methods.

3. Impact: effect of eco-innovation on the environment, where the range of influence spreads from incremental environmental improvement to total elimination of harmfulness for the environment (*Eco-innovation...*, 2009).

A useful method illustrating the course and conditions of eco-innovative processes is the qualitative model of eco-innovation presented by M. Kanerva, A. Arundel and R. Kemp. The model includes relationships between input factors in innovative processes (i.e. R&D, patents, investments in innovative activity) and the results of eco-innovation implementation on a micro and macroeconomic level. Moreover, the model includes the influence of factors stimulating innovative activity in the form of mechanisms of environmental regulation. Finally, according to the model assumptions, eco-innovations lead to assumed economic and environmental effects, e.g. decrease in production material consumption, reduction in pollution and greenhouse gas emission (Kanerva, Arundel, Kemp, 2009). It should be noted that the occurrence of effects of eco-innovations is a special object of interest of green growth in terms of the analysis of environmental problems and the search for a sustainable paradigm of economic development.

Eco-innovations are consistent with the green growth concept articulating the need of the support of pro-growth processes, with the assumption that natural assets will still be the source of environmental resources and services forming social welfare (*Towards...*, 2011). In such a situation, green growth is a narrow category and may be perceived as a subset of sustainable growth. This results from the fact that green growth has an operational dimension and is limited to the dimension of economy-environment interactions in the sense of investment, innovation and competitive processes, which do not violate existing ecosystems. Green growth strategies are directed at the creation of premises for consumers and entrepreneurs for pro-environmental behaviors, which should result in a flow of production factors (capital, work, technology) towards more ecological activities.

Eco-innovations are a basic source of green growth, since the introduction of innovations profitable for an environment allows for an outward shift of the production-possibility frontier without the need for natural capital depletion. Growth strategies based on eco-innovations require the application of various instruments and tools supporting market mechanisms. Market failure in the case of eco-innovations results first of all from the occurrence

of externalities being a matter of issue for environment pollution (Rennings, 2000; Popp, Newell, Jaffe, 2010). Problems with the internalization of environmental externalities, such as making them fully respected in economic calculations of manufacturers and consumers of goods, lead to suboptimal levels of innovations induced by the market.

According to the theory of induced innovations formulated by J. Hicks, an increase in the price of production factor is an impulse for the design and the implementation of inventions allowing the economization of an application of a relatively more expensive factor (Hicks, 1932). The lack or improper valuation of externalities, e.g. an overly low fee for pollution emission, may lead to limitation of work on innovations allowing environmental problems to be solved. It is worth emphasizing that according to the reasoning of I. Wing, the key issue in an analysis of the influence of solutions allowing internalization of negative externalities on innovative behaviors of the enterprises, is the need to respect the degree of substitution between *dirty* and *clean* production factors (Wing I., 2006).

Paradoxically, even the occurrence of a decrease in the costs of production factors induced by inventions does not constitute sufficient condition for absorption and diffusion of innovations, an example of this are energy-saving technologies which appear to be cost-effective, but are not commonly used (Gillingham, Newell, Palmer, 2009). This observed aberration may be explained by the occurrence of the phenomenon of information asymmetry in the field of the assessment of the environmental benefits of specified technological solutions, as well as network externalities, or dynamic economies of scale.

The dominant opinion in the literature, i.e. that a stronger influence of environmental instruments of a market character on eco-innovations, e.g. taxes or tradable emission allowances, when compared to instruments of a *command and control* type, e.g. environmental performance and technology standards, is not unequivocally confirmed by the results of empirical studies (Johnstone, Hascic, Popp, 2010). Thus, the key issue for the enforcement or inducement of innovations is not the form of regulations, but their range and restrictiveness (Lanoie et al., 2011), and, as proved by R. Innes and J. Bial, technological leaders prefer stricter environmental regulations, since such requirements cause an increase in costs for technologically less advanced competitors (Innes, Bial, 2002).

An issue as significant as the analysis of barriers and premises for the introduction of eco-innovations is the measurement of the effects of the implementation and diffusion of environmentally friendly innovations. This is a difficult task, since not only the eco-innovation effects on the micro level need to be taken into consideration, but also the effects in the context of the quality of the

whole environment and society should be considered.

Environmentally, an assessment of eco-innovation effects on a micro level is usually limited to an analysis of changes in energy efficiency, e.g. measurement of fuel consumption by vehicles due to the application of advanced technologies (Pakes, Berry, Levinsohn, 1993).

In order to determine the potential possibilities of eco-innovations in the field of a leveling of the relationship between economic growth and degradation of the natural environment, integrated 3E models are the most often used (Energy, Economy, Environment). Particular models applied in analysis and simulations, inter alia, of climatic changes, resource availability etc., differ mainly in their approach to the modeling of technical progress, which may be of an endogenous or exogenous character (Kijek, 2010; Popp, Newell, Jaffe, 2010). Socially, the effects of the implementation of novel pro-environmental solutions are usually considered with respect to improvement of social welfare as a result of changes in employment levels on the labour market. In such a scenario, eco-innovations may be treated as a way to overcome poverty, under the assumption that as a final effect they contribute to the creation of new workplaces, and thus an increase in societal income levels. It should be emphasized that any relationship between the introduction of eco-innovations and employment levels is not unequivocal and depends mainly on the kind of eco-innovations implemented – process or product (Pfeiffer and Rennings, 2001).

In the case of the implementation of process eco-innovations both their positive and negative effects may be demonstrated by the range of demand for labour coming from market agents. Thus, rationalizations in production processes (e.g. production automatization) often leads directly to increased labour productivity, which with constant production levels means a reduction in employment. On the other hand, increases in labour productivity contribute to an improvement in the cost competitiveness of market agents, and thus indirectly is reflected in an increased demand for enterprise products and thus labour.

In turn, introduction of *end-of-pipe technologies* may concurrently cause a need for the employment of additional, specialized staff for new appliance operation, and also lead to a decrease in cost competitiveness, and in consequence to a decrease in demand for enterprise products and workplace reduction. Thus, the total effect of eco-innovation implementation with respect to the change in demand for labour depends on the strength of the relationship between opposite partial effects. Empirical studies conducted by J. Horbach and K. Rennings demonstrate that eco-innovations connected to implementation of more effective technologies integrated with production leads to an

increase in enterprise competitiveness and employment levels as opposed to the effects of the introduction of *end-of-pipe technologies* (Horbach, Rennings, 2012).

With regards to product eco-innovations and their influence on creation of new workplaces, it should be noticed that the process of the introduction of environmentally friendly innovative products is connected to the creation of new economy sectors included in eco-industry. According to the results of the studies presented in the *Eco-innovation Scoreboard*, the number of people employed in eco-branches is increasing in Europe, and also export of these sectors of the European economy is increasing (The Eco-innovation..., 2011).

Ecological innovations in EU countries

In the light of the theoretical considerations presented above, the determination of the inclination for eco-innovation application as well as the motives and effects of their implementation in enterprises from European Union countries are interesting cognitive issues. The analyses presented below are based on the results of examinations of innovative activity in the industry and services sectors in the years 2006-2008, based on a questionnaire and the methodology of an examination of the *Community Innovation Survey 2008*. Innovations bringing benefits for an environment were examined for the first and, simultaneously, last time in such a wide range in the 2006-2008 edition of the study.

Among the member countries of the EU, the highest inclination for innovation realization (see Fig. 1) in 2008 was noted in Germany (79.9 % of all enterprises) and Luxembourg (64.7 %). These were the only member countries of the EU in which over 60 % of enterprises were accepted as innovative ones. The mean for EU-27 countries (except Greece) was 51.6 %. The lowest level of innovativeness was noted in Latvia (24.3 %), Poland (27.9 %) and Hungary (28.9 %). These were the only member countries in which the percentage of innovative enterprises was below 30 %.

Benefits for the environment resulting from innovations may occur during the process of the production of goods and services or at the stage of making use of goods or services by final users. Table 1 presents the percentage of innovative enterprises which recorded environmental profits. Six kinds of profits connected to the production of innovative goods and three kinds of profits connected to their use are presented.

Among the production benefits resulting from the introduction of eco-innovations, the frequent decrease in energy consumption and increase in recycling level were mentioned, with the exception of Estonia and Lithuania where the most often occurring environmental benefit was a decrease in resource and material consumption.

Figure 1. Proportion of innovative enterprises, 2008 (in % of total enterprises). Source: own calculations based on Eurostat data.

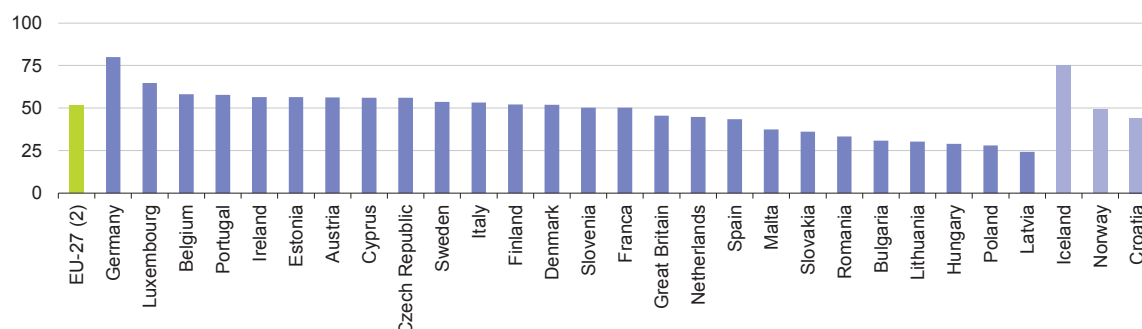


Table 1. Innovations with environmental benefits – proportion of innovative enterprises introducing innovations with specified benefits, 2008 (% of innovative enterprises). Source: Eurostat.

Country	Environmental benefits from the production of goods or services within the enterprise						Environmental benefits from the after sales use of a good or service by the end-user		
	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ footprint (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced air, water, soil or noise pollution	Recycled waste, water, or materials	Reduced energy use	Reduced air, water, soil or noise pollution	Improved recycling of product after use
Belgium	22,8	30,3	26,6	25,7	28,8	35,7	27,0	20,8	24,0
Bulgaria	11,6	13,6	6,0	10,0	10,5	8,6	8,8	8,1	6,1
Czech Republic	28,6	33,1	17,1	20,1	27,0	41,3	30,7	27,5	29,7
Denmark	:	:	:	:	:	:	:	:	:
Germany	38,8	46,4	38,5	25,5	41,7	41,2	44,0	35,5	30,8
Estonia	27,4	11,7	13,4	22,3	10,0	10,6	15,0	10,2	10,4
Ireland	28,2	33,5	33,1	30,9	27,1	54,3	33,1	23,8	37,1
Greece	:	:	:	:	:	:	:	:	:
Spain	:	:	:	:	:	:	:	:	:
France	27,6	28,2	21,0	26,5	24,7	38,8	23,9	17,6	17,7
Italy	13,0	16,5	13,4	15,3	23,8	25,8	23,5	23,5	23,3
Cyprus	10,8	13,6	8,6	8,2	13,5	13,2	5,4	6,1	5,6
Latvia	19,9	23,5	11,5	19,7	27,9	14,3	21,7	27,9	12,6
Lithuania	29,3	29,3	20,7	25,6	21,3	18,2	22,9	20,0	18,7
Luxembourg	20,8	24,8	27,1	26,6	22,6	41,4	30,1	18,3	29,2
Hungary	31,8	36,3	17,3	29,4	27,6	26,1	19,1	16,9	13,4
Malta	23,0	27,0	13,7	19,8	12,5	27,8	19,8	6,9	16,9
Netherlands	17,1	21,1	15,9	22,3	19,3	21,5	19,8	15,9	13,8
Austria	26,9	30,7	25,1	27,4	30,9	23,6	28,9	23,1	17,2
Poland	23,5	25,3	16,1	24,9	28,2	23,7	24,8	25,3	17,0
Portugal	37,8	41,5	31,5	41,3	46,2	58,5	39,1	38,8	41,8
Romania	31,3	32,8	22,7	21,1	31,5	32,3	30,3	29,6	20,1
Slovenia	:	:	:	:	:	:	:	:	:
Slovakia	20,2	23,7	9,2	19,5	21,9	29,3	26,2	21,0	19,0
Finland	32,0	32,9	25,9	24,0	22,8	32,2	33,0	20,3	22,2
Sweden	24,0	28,6	23,7	24,2	23,0	21,8	28,1	23,6	18,5
Great Britain	:	:	:	:	:	:	:	:	:
Croatia	28,8	32,7	18,1	30,4	39,2	36,1	32,6	36,1	31,2

Table 2. Motivation to introduce environmental innovations – proportion of innovative enterprises reporting specified motivations, 2008 (% of innovative enterprises). Source: Eurostat.

Country	Existing environmental regulations or taxes on pollution	Environmental regulations or taxes expected to be introduced in the future	Government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
Belgium	20,1	16,3	7,8	13,6	26,1
Bulgaria	8,6	5,4	2,4	4,0	5,2
Czech Republic	40,6	26,8	9,5	13,6	24,3
Denmark	:	:	:	:	:
Germany	20,8	19,0	7,7	18,3	18,8
Estonia	24,1	19,3	4,4	17,2	26,3
Ireland	27,2	19,9	9,1	25,3	28,5
Greece	:	:	:	:	:
Spain	:	:	:	:	:
France	24,0	15,0	6,4	17,6	23,9
Italy	22,9	16,3	12,8	13,0	14,8
Cyprus	7,2	5,3	3,1	3,9	13,1
Latvia	19,1	11,3	8,3	13,6	34,0
Lithuania	39,3	31,8	12,5	26,8	24,5
Luxembourg	10,1	11,4	4,4	15,0	43,2
Hungary	41,3	34,5	4,1	31,9	32,8
Malta	23,8	23,8	8,1	11,3	13,3
Netherlands	10,5	9,2	6,7	13,8	12,7
Austria	:	:	:	:	:
Poland	24,1	16,1	4,9	12,7	13,3
Portugal	31,6	18,3	7,0	21,9	42,0
Romania	37,6	20,4	9,3	17,6	17,7
Slovenia	:	:	:	:	:
Slovakia	37,0	27,3	4,7	11,7	18,9
Finland	15,8	17,8	6,2	30,3	29,1
Sweden	8,4	12,3	2,7	14,7	15,1
Great Britain	:	:	:	:	:
Croatia	35,7	28,0	8,4	19,6	30,3

In Latvia, Austria and Poland (and also in Croatia) a significant decrease in pollution emission was demonstrated, while in Holland a considerable utilization of less pollutogenic or dangerous materials was emphasized.

Among the utilitarian benefits, decreased energy consumption was demonstrated the most often, but on Cyprus, Latvia and Poland (and also in Croatia) a significant decrease in air pollution was emphasized, while in Ireland and Portugal an improvement in the area of the recycling of products.

The most often noted reason for the introduction of ecological innovations by enterprises were existing environmental regulations, fees and taxes connected to pollutant emission and voluntary codes or agreements aimed at implementation of so-called good environmental practices (Table 2).

In Holland and Finland, the main motive for changes was the current or expected demand from customers. In turn, expected future environmental regulations or taxes were cited as a source of motivation on Malta.

It is worth noting that among five motivation factors, which could have been demonstrated by the enterprises, the availability of government financial incentives for environmental innovations was chosen the least often.

Summary

The theoretical considerations and the analysis of empirical studies presented above allowed for the formulation of the following conclusions:

1. The problems of eco-innovations are not emphasized enough in current discussion on sustainable development. The need for wider scientific discourse on the issues of the conditions of the implementation and the absorption of environmentally friendly innovations results from the fact that they are a basic source of green growth connected to the undertaking of activities directed towards economic growth and development, maintaining the environmental functions of natural assets shaping social welfare.

2. In the presence of existing barriers to the implementation and the diffusion of eco-innovations (intensified by market failure), the key issues for the creation of suitable environmental are regulations stimulating market agents for the absorption of eco-innovations. Measurement of the effectiveness of the application of tools creating conditions for eco-innovation implementation requires a quantification of their effects, which is the task with a large degree of difficulty due to the need for measurement of net profits taking into account direct and indirect effects.
3. In the social sphere, the effects of the implementation of eco-innovations may be considered from the point of view of changes in social welfare levels. On the one hand, the introduction of the eco-innovations of a product character causes the creation of new economy sectors attached to eco-industry, which is reflected in the growth of employment and an improvement in the material situation of society. On the other hand, the implementation of process eco-innovations may have both positive and negative impacts on the demand for labour, while the final effect depends on the relations of partial effects. The positive effects of process eco-innovation implementations include reduction in manufacturing costs, which may be indirectly reflected in an increased demand for enterprise products, and also in increased demand for labour. It should be emphasized that an increase in production levels (cost decrease) connected to the introduction of new technologies may concurrently negatively affect demand for labour resulting from the phenomenon of work substitution by capital. Therefore, not only technological, environmental and economic aspects should be considered in discussion about eco-innovation process in the context of sustainable development, but societal aspect should be taken into consideration as well.
4. Analysis of the results of the study of the innovative activity of enterprises – CIS 2008 demonstrates, that the highest inclination to eco-innovation realization was noted in Germany and Luxembourg, while the lowest level of eco-innovativeness was noted in Latvia, Poland and Hungary. Among the production benefits resulting from the introduction of eco-innovations, the frequent decrease in energy consumption and increase in recycling levels were mentioned. In turn, among utilitarian benefits, decreased energy consumption was

the most often demonstrated. The most often noted reason for the introduction of ecological innovations by enterprises were existing environmental regulations, fees and taxes connected to pollution emission and voluntary codes or agreements aimed at implementation of so-called *good environmental practices*.

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Sustainable Development and Wind Farms

Zrównoważony rozwój a ферmy wiatrowe

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Abstract

According to assumptions adopted by the European Union, energy production from renewable energy sources (RES) on a community-wide scale will reach 20% by 2020.

One way to achieve this ambitious target is to develop wind energy. However, its evaluation is inconclusive. Among the benefits, its positive impact on the environment is constantly emphasised, in particular the lack of polluting emissions during electricity production. At the same time, wind turbines, a new, unfamiliar element appearing on the landscape could constitute an additional source of human stress.

In this article the authors attempt to assess the investments in wind power in Poland. The discussion takes into account environmental, social and economic aspects in accordance with the concept of sustainable development.

Key words: sustainable development, wind farms, renewable energy sources, health

Streszczenie

Według przyjętych w Unii Europejskiej założeń, produkcja energii z odnawialnych źródeł energii (OZE) w skali całej Wspólnoty ma w 2020 r. osiągnąć poziom 20%.

Jedną z dróg prowadzących do osiągnięcia tego ambitnego celu jest rozwój energetyki wiatrowej. Jej ocena nie jest jednak jednoznaczna. Wśród korzyści podkreśla się pozytywny wpływ na środowisko, w szczególności fakt braku emisji zanieczyszczeń podczas produkcji energii elektrycznej. Zarazem turbiny wiatrowe stanowią nowy, obcy element pojawiający się w krajobrazie, mogąc stanowić dla człowieka źródło dodatkowego stresu.

W niniejszym artykule podjęto próbę oceny ocena inwestycji związanych z energetyką wiatrową na przykładzie Polski. Zgodnie z koncepcją rozwoju zrównoważonego dyskusja została przeprowadzona z uwzględnieniem aspektów: ekologicznych, społecznych i ekonomicznych.

Słowa kluczowe: zrównoważony rozwój, ферmy wiatrowe, odnawialne źródła energii, zdrowie

Introduction

Sustainable development is *development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs* (WCED, 1987). It means socio-economic development, in which political, economic and social processes are integrated whilst main-

taining environmental balance and sustainability of a community's basic needs, of both today's and future generations (Bernat, 2010). It clearly points to the three pillars of sustainable development which are society, economy and the environment (Figure 1).

According to Tyburski (2007), the realisation of sustainable development is related to the reconcilia-

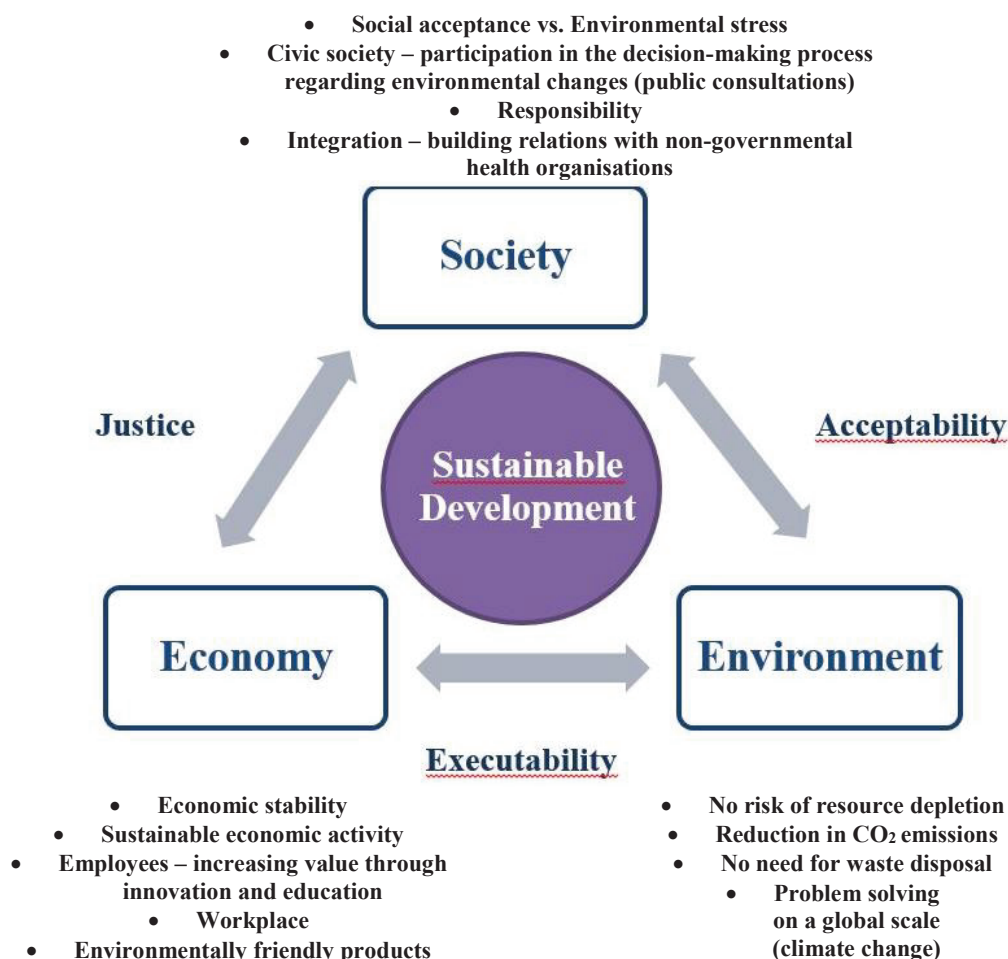


Figure 1. Sustainable development in the context of wind energy. Source: Authors' own work.

tion and harmonisation of governance into the human consciousness in its world of values, as well as political, social, economic and ecological governance. Thus, sustainable development concepts are based on social values such as prosperity, the environment, justice, human rights, political rights, democracy, the rule of law, the choice between *be* and *possess*, that is on the pursuit of not only the material but also non-material well-being in a manner that is friendly both to the natural and social environments. The main challenge posed for societies in realisation of sustainable development is its social legitimacy, acceptance of policies, regulations, initiatives and decisions, and also treating them as legitimate in terms of the currently prevailing social values (Angelstam, Elbakidze, 2010). According to Ingarden (1973), man is capable of co-participating in the world and making successive changes in it, he takes responsibility for himself, for other people and for the environment in which he lives. He is also able to undertake responsible actions with respect to himself, nature, natural and social environments.

However, educated action requires cognitive effort, an established hierarchy of values, feeling of the

need for action. This action is realised through well-informed participation in public consultations, seeking reliable information about the forthcoming environmental changes, the impact of these changes on human health and the environment. Taking responsibility and targeting action also relates to human impact on climate change (Ingarden, 1973). Human capability, as indicated by Ingarden, seems to be the basis for the implementation of sustainable development in accordance with the *Decade of Education for Sustainable Development* (Borys, 2010). A contemporary man should have environmental and social awareness, as well as the knowledge to evaluate the consequences of today's actions and understand the need to protect the Earth's natural resources for future generations (Bernat, 2010; Kuzior, 2010, WCED, 1987).

The demand for electricity and wind power

Amongst our civilization's most important challenges, it is necessary to point out the need to ensure a steady supply of electricity, which in the context of civilization can be included in the fundamental rights of modern man (Stappen, 2006).

Areas prevented from using electricity freely are treated as civilization deserts. It is estimated that there are still more than 2 billion people without access to electricity. Differences in access to energy resources and the issue of their exhaustion (Pieńkowski, 2012) multiply the growth in regional differences, reinforcing the economic and settlement slowdown and the sense of social injustice (Berdo, 2006, Figaszewska, 2009).

The moral aspect of the modern use of fossil energy is not only a negative connotation in the context of environmental and health interactions, but also calls into question the legitimate right of contemporary people who have at their disposal non-renewable assets, such as minerals, to which future generations also have the right (Kudelko, 2012). This is also reflected in the concept of environmental restrictions (Steppen, 2006). Despite the widespread introduction of energy-efficient appliances, it is predicted that electricity consumption in the coming decades will continue to grow. It forces decision-makers to explore new ways of ensuring energy security for individual countries (EWEA, 2010; Wiśniewski, Michałowska-Knapp, 2010).

According to the concept of sustainable development, renewable energy sources (RES) seem to be the rational and economically justified response to the need for universal access to energy (Wiśniewski et al., 2008; Kudelko, 2012; Pawłowski, 2009). It is an environmentally friendly alternative to fossil fuels, allowing a country to increase its energy independence reducing, in such a way, its fossil fuel imports (Raport, 2004).

In the European Union the requirement for the development of renewable energy sources (RES) is included in the *Europe 2020* strategy (Hoedl, 2011; Cizimowska, 2012) associated with the 2009/28/EC Directive.

Among the RES, wind energy plays an important role. Its development is an excellent example of the advantages and difficulties which are inherent in the development of this technology in the context of sustainable development.

In the group of benefits it should be stated that, according to the *2004 World Health Organisation Report*, wind power is the *gentlest* way of generating electricity in the context of impact on human health (McCaffery, 2004). Such a positive evaluation is related to the fact that RES is responsible for the emission of less than two percent of the greenhouse gases that are emitted by the combustion of coal (per MWh upon conversion), even when turbine production is included in the analysis (Global Wind, 2009). Furthermore, it is estimated that in 2007, in the USA wind energy reduced carbon dioxide emissions by nearly 28 million tonnes. Even more has been achieved in Europe, where wind farms reduced annual CO₂ emissions by 106 million tonnes in 2009, which is equivalent to taking off the road 25 % of all cars in the European

Union. Wind energy allows Europe to save 6 billion euros annually in fuel costs (Global Wind, 2010). These are important achievements against plans to reduce greenhouse gas emissions by 80 % by 2050, relative to 2005 (Udo, Pawłowski, 2010).

Wind energy development and sustainable development assumptions

In an attempt to assess wind power, let us look at the social, environmental and economic issues in the context of the sustainable development concept. It should be noted that the construction of wind farms creates concern, doubt, and even resentment among local communities. Consequently this creates a sense of uncertainty which creates tension resulting from the inability to use tested best practices, which is a challenge in the social aspect of sustainable development.

Wind turbines are a new, unfamiliar element appearing on the landscape, and for man they can be another source of stress (Evans, Cohen, 1987). Civilisation achievements within the meaning of the local community can lead towards a *risk society* (Beck, 2002), causing side effects (e.g. industrial disasters, devastation of the natural environment, climate change, diseases) and threaten the sense of security (Sztompka, 2007). Lazarus defines the state of human uncertainty as a stress induced by external stimuli, not in terms of the state of the subject but in the context of a particular type of relation, which occurs at a given time between the individual and the environment. The described state of tension can be evaluated as straining or exceeding the compensation capabilities of the individual and threatening its well-being (Lazarus, 2002; Lazarus, 1991; Łosiak, 2008). Man assesses the cognitive investment because of its importance to his welfare (Łosiak, 2008). This subjective concept, referring to happiness, satisfaction, and satisfaction is derived from optimal functioning in everyday life, in physical, mental, emotional, social, as well as spiritual terms. Such an understanding of welfare as presented by McDowell (2009) corresponds to the World Health Organisation's (WHO) definition of health from 1948, and is still prevalent today, where health is defined as fully physical, mental, social welfare, and not just the absence of infirmity. Announcing changes to the environment in which man lives can lead to changes and dysfunction in each of the previously mentioned health areas. On the other hand, it can also lead to mobilising the body's forces and taking action to adapt to the new situation. This mobilization results from physical health during proper functioning of the various organs and systems, as well as mental health which translates into effective action, satisfactory interpersonal relationships, and the ability to adapt to changes and cope with adversity (Hales, Shahrokh, 2009; Melosik, 1999). Other spheres of health con-

ditioning educated and responsible human activity are the social and spiritual spheres. The state of public health is the ability to establish correct relationships with others and to fulfil social roles, whilst health in the spiritual realm assumes known values. In the socio-environmental paradigm of health, it is pointed out that not only do aspects of biomedical research determine them, but also the whole psychological, social and cultural context in which man operates. He is part of the ecosystem, his health is therefore the result of a dynamic equilibrium of the somatic potential of an organism and the environment in which he lives (Stęplewski, 2012). As a participant in ecological processes, a person is subjected to variable ecosystem interactions, and he transforms it by his own actions.

The physical environments in which a person spends most of his time, is the home, the workplace and their immediate surroundings. Therefore, plans and projects for new investments must take health into account. Particular attention should be paid to the fact that in particular the home is the main space enabling families to implement their health policies, dependent on creating a safe, pollution-free environment. The development of renewable energy plays an essential role in meeting the demands of social, environmental protection and human health from air pollution, and a country's energy security. Investments arising within its framework are included in the construction to help meet the basic needs of society and are one of the essential elements of sustainable development.

In order to create a safe environment and to gain social acceptance for the aims of this development, it is necessary to guarantee residents easy access to reliable scientific information, and also to social support which will contribute towards minimising the consequences of environmental stress (Boltromiuk, 2012; Damurski, 2012; The Aarhus Convention Journal of Laws 03.78.706, 1998; Balaban, Thayer, 2001; 2003/35/EC Directive; Evans, Cohen, 1987).

Within the context of the problems discussed in this article the main potential source of environmental stress is the construction of wind farms. With this type of investment, as with any other, community law requires the recognition of the needs of all parties concerned in the investment and the preservation of the undisturbed environment. Three parties are usually involved in infrastructure development but guided by different goals, needs and values. These are the investors seeking to rapidly realise the investment, the environmental organisations in defence of the natural environment, and the residents for whom the proposed investment often means a lower quality of life, by needing to adapt to the changes, but is also associated with measurable benefits. The constitutionally accepted concept of sustainable development requires that the investment processes should be planned with regard to

the interests of the investor and the social and natural environments. Investors and decision-makers are required to reliably inform all interested parties and prevent any conflict related to the investment. This places an obligation on those parties to conduct public consultations with local communities and non-government organisations, based on scientific knowledge and social skills (Derwich, Iwińska, 2010; Kurpas, 2011; Frączek, 2011). Public consultations should be carried out at the earliest possible stage of the planning process for the development. This way, people are allowed to co-decide on changes that will occur in their environment (Mroczek, 2011; Kurpas, 2011).

The implemented or planned investment relating to the construction of wind turbines, their distance from the homestead, as well as the circulating myths on the adverse effects of wind turbines on human health and the natural environment are environmental stressors whose actions are further compounded by the media (Evans, Cohen, 1987; Bell, 2004; Mroczek, 2011). Concerns about the harmful effects of wind turbines and associated anxiety levels are the beginning of physiological reactions which occur in the body, and consequently affect the health and the quality of life of the residents who live in the vicinity of the wind farms.

Currently, wind farm investors are required to carry out an environmental impact assessment to evaluate any potential impacts before the start of construction (Cianciara, Wysocki, 2008; HIA, 1999; Breeze, Lock, 2001). One of the most important and most frequently conducted national practices, which take into account public opinions, is the progress on the evaluation of the impact of proposed activities on the environment. However, consultation still does not meet many of the requirements of national law and international agreements (PTS, 2011; Długosz & Wygnański 2005; Wiśniewska 2007). Investments in wind energy have a high risk of failure because of local community protests, failure to obtain permits at a given stage or a refusal. Such a situation results from the investment specifics which, being part of a strategic economic sector which energy is, do not remain indifferent to both the natural environment and for the residents nor the location itself. Therefore, this type of investment is associated with a long-term and relatively complicated process (Ernst & Young, 2012; Długosz & Wygnański, 2005; Wiśniewska, 2007). It is essential that a relationship exists between the landlords and investors or developers. Signing civil-legal agreements is not subject to the requirement to inform the local authorities of this fact but it is required in the next stage envisaged by law. Thus, conflicts arise due to the lack of knowledge and a perception of local authorities concealing information about the investment project. This is a common complaint by local communities regarding local authorities. At this stage, wind energy can

become part of a kind of a game between the leaders of local communities, often with the participation of politicians as opinion leaders. Professionally executed promotional consultation programs must therefore be signed up to the communication strategy of the entity implementing the project (Kurpas, 2011). Then they give the chance, not only to meet the requirements of law and the realisation of the investment within the stipulated schedule, but also the opportunity to take into account the demands raised at the planning stage. Moreover, among the public consultation benefits, the following should be emphasized: enabling local communities to influence decision-making on the final shape of the investment, weakening social protests against the planned changes, closer relationship between authorities and citizens, encouraging people to participate in public life, and a sense of influencing the environment which makes the citizens co-responsible for the environment. What is more, involvement in public consultations promotes social cohesion and thus leads to the formation of a civil society (Frączek, 2011; Kurpas, 2011; PTS, 2011; Iwińska, 2010).

According to the concept of sustainable development it is also recommended to evaluate the impact of the construction of wind turbines on health (Health Impact Assessment – HIA). It is a combination of procedures, methods and tools by which the policy, program or project may be evaluated in terms of potential effects on the residents' health and the distribution of these effects within the population. The HIA consists of several elements. The first is to consider the evidence to predict the relationship between policy, program or project and the health of the population. The second element concerns the consideration of opinions, experiences and expectations of the residents, who could be affected by the change. Another is to provide additional information allowing the decision-makers and the local community to familiarise themselves with the potential health effects. The HIA anticipates the presentation of the proposed amendments i.e. options for maximising the positive and minimizing the negative impacts on health (Cianciara, Wysocki, 2008; HIA, 1999; Breeze, Lock, 2001). Opponents of wind farms often put forward the noise aspect as a fundamental factor which disturbs the functioning of the local community. It is worth noting that the noise emitted by the wind turbines is measured in accordance with the following standard: *IEC 61400-11 Wind turbine generator systems - Part 11: Acoustic noise measurement techniques*. For example, Polish building regulations do not explicitly state the distance that must be maintained between the wind turbine and the homestead. It treats the wind turbine as a building, equal to tunnels, viaducts, and sports buildings (Building Regulations, 2011). In contrast, it is very different in the case of Canadian law. It is very restrictive, it ex-

plicitly states the distance from the sound receptor to the wind turbine and the upper threshold of audible sound which should not be exceeded. For a single wind turbine the minimum distance is 550 metres, but when there are for example 5 turbines (wind farm) this distance increases to 950 metres (CMOH, 2010).

Many studies have been conducted on the impact of noise and infrasound generated by wind turbines on the daily lives of people living in the vicinity of wind farms, which showed that the noise is low, provided the wind farm is located properly (Noise, 2000; Ganesh, 2009; den Berg, 2004, 2008; Hanning, 2009; Global Wind, 2009; Pedersen, van den Berg, Bakker, Bouma, 2009; Pedersen, Larsman, 2008; van den Berg, 2004; Noise, 2000).

Researchers from the University of Salford determined that out of the 133 wind installations operating in England, complaints regarding noise at different times of the day were reported in 27 cases. Of the 239 formal complaints received from 1991, up to 152 related to one location (Moorhouse et al., 2007). For comparison, the number of complaints relating to industrial noise exceeds those concerning noise from wind farms by a factor of one thousand. This shows that the noise from the wind farm is a small scale problem compared to other types, but important for the inhabitants of these villages.

Current knowledge allows for the conclusion that the operating noise of wind turbines poses no threat of hearing loss or other adverse health effects, since to date there is no evidence that the audible sounds emitted by wind turbines have any direct physiological effect in humans (Colby et al., 2009; van den Berg, 2004).

In Poland, research was carried out using the SF-36 v.2 questionnaire on the quality of life for a group of 82 residents in the municipality of Wolin located close to wind farms (Tarasiuk, Mroczek, 2011), and for a group of 336 residents in total, living in the north-west part of the country (Mroczek, 2011a). No empirical confirmation as to the quality of life was obtained regarding the effect of distance between the place of residence and the wind farm for up to 2 km. Similar studies were conducted in New Zealand, in which however, it was shown that the noise generated by the wind turbines lowers the subjective quality of life related to social functioning of residents living within 2 km of a wind farm (Shepherd et al., 2011).

Most of the complaints raised by the people living close to wind turbines concerned the discomfort caused by their operation which produces a distinctive hum by the turbine blades, but does not exceed the ambient noise level surrounding people in an average environment. A small proportion of the reported complaints is the resulting agitation and stress from listening to these sounds by people who experience similar effects caused by noise from cars, trains, farm machinery or household appliances.

es (Colby et al., 2009). Agitation is not however a disease but results more from the subjective perception rather than the intensity of the sound (Pedersen, Waye, 2008; Pedersen, Larsman, 2008; Pedersen, Waye, 2007; Pedersen et al., 2009; Pedersen, Hallberg, Waye, 2007). As stated in the *The Potential Health Impact of Wind Turbines* (2010) report, some people living near to wind turbines report such symptoms as dizziness, headaches and sleep disturbances but research shows no direct causal link between the noise generated by wind turbines and negative health effects. However, some people may experience irritation. It has been suggested that it may be a reaction to the characteristic *hum* or the variation in the sound generated by the wind turbines rather than the intensity of the sound. Low frequency sound and infrasound from wind turbines currently in use are well below the acoustic pressure level above which known health effects occur (Gulden, 2008). This is also confirmed by other authors (Jakobsen, 2005; Leventhall et al, 2003; Leventhall, 2006; Rogers, 2009; Pedersen, Hallberg, Waye, 2007; Pedersen, Larsman, 2008). Another conclusion from the report emphasizes the importance of public participation in the planning of wind farms as a factor that could alleviate concerns about the impact of investments on health. In addition, the survey showed that the noise measurements in populated areas near wind farms in comparison with the noise level in other rural and urban areas, when assessing the actual noise level, is the key missing data category which should be supplemented. Assessment of the noise level in the vicinity of wind farms and other residential areas, including monitoring compliance within the permissible noise levels, is a very important condition when making a well-informed decision about the usefulness of epidemiological studies on the effects on health (Gulden, 2008). This research will be conducted in Canada from 2013 (Research Project, 2013).

The decision to build a wind farm must also take into account economic aspects. Here, all the features of local democracy are visible. A unique example are the RES investments implemented in the form of public-private partnership (PPP), in which the local community becomes a real co-owner of the installation and draws real benefits from it (Report, 2012), which is important from the sustainable development perspective. Also, investments in wind power, realised using the investor's capital, fulfils the criteria of sustainability, guaranteeing respect for both the resources and the environment as well as local economic growth, and leads to increased social cohesion. The local community draws various benefits from the realisation of the investment in its locality. The most important is the extra income for the residents from the lease of land, significant budget revenues for the municipality from property tax and income for the whole

region from Corporate Income Tax. An increasingly common practice is to involve the investor in the community's current issues. In particular, this relates to the maintenance of the transport infrastructure, thus indirectly contributing to the improvement of the power grid. Realisation of such investments allows municipalities to self-finance projects and initiatives which increase social and economic cohesion, contributing to the growth opportunities and thus reducing energy poverty.

It is estimated that investing in wind farms, due to EU requirements on the percentage of energy derived from renewable sources can bring tangible economic and social benefits for the country as well as for the local community (Soliński, Solińska, 2008; EWEA, 2010).

In the group of economic benefits the following should be noted: a reduction in penalties associated with air pollution emissions, including CO₂. Wind power, as an ecological alternative to fossil fuels, can also increase energy security, and thus a country's energy independence, restricting imports of fossil fuels (Polish Energy Policy, 2010; EWEA 2010).

The wind farm generates two types of revenue: sale of electricity and the sale of *green certificates*. Wind energy, available locally, serves to develop local energy markets, develops the energy infrastructure, improves the competitiveness of the energy sector, and contributes by increasing tax revenues for the local municipality. Global turnover in the wind energy sector in 2010 amounted to 40 billion euros, whilst employment in this sector amounted to 670,000 people (International Wind Energy Development, 2006; PSEW, 2011). Current estimates indicate that the wind energy sector directly creates 4.3 jobs per 1 MW of installed capacity. It is expected that over the next decade the wind energy sector with the development of *off-shore* farms will create about 250,000 new jobs in Europe. The European Commission estimates that in achieving the Community objective of a 20% share of renewable energy will create 2.8 million new jobs and increase GDP by 1.1% (EWEA, 2010). The development of the labour market is highly significant since demand for wind turbines continuously grows with demand outstripping supply (PSEW, 2011; EWEA, 2007; Kassenberg, 2012). It will include employees with various specialisations in the fields of IT, electronics, construction, telecommunications, energy, manufacturing and consulting. Constructors, designers, wind turbine installers, electrical engineers and control engineers are especially valuable. In addition, the sellers of wind turbines, wind turbine operators, maintenance technicians, managers responsible for environmental protection, financial experts, investment advisers, and others (EWEA, 2012, PSEW, 2011, Wiśniewski, Michałowska-Knapp, 2010). Most companies are trying to take advantage of the

available local human capital when realising projects which result in increased local employment. The development of the energy sector also involves integrating the scientific communities from disciplines such as sociology, psychology, public health, environmental health, law, and finance.

Conclusions

In conclusion, it should be said that development of wind power is maintained in accordance with the concept of sustainable development.

Taking into account the environmental aspects, the desire to maintain the ecological equilibrium, the lack of pollution emitted into the environment and a reduction in the demand for traditional energy sources should be pointed out. An additional environmental *protection* is an obligation imposed on the wind farm investors to perform a full environmental impact assessment, whose aim is to assess any potential impacts (including effects on human health) even before the start of construction.

In the economic context, taking into account the need to increase the use of renewable energy sources in all EU countries, a sharp rise in investment and new wind farm capacity is anticipated, which with the right organisation should also bring tangible economic benefits to the local community fostering their safety, development and independence (Angelstam, Elbakidze, 2010). Attention should also be drawn to the bilateral relationship between health and economic growth, on the assumption that economic growth is endogenous and depends on two factors, innovation and human capital (Czapiński, 2011; Peter, 2011).

From the social perspective, interactions and integration between the public, private and civil sectors at the local, regional, national, state and international level should be emphasised. It is also important to expand the scope of knowledge by involving representatives from the fields of humanities and social sciences, as well as engineering and technology. However, the local community's perception of wind energy cannot be underestimated which may, but not necessarily, be positive. Widespread free access to information is as equally important as the environmental educational programs. Currently there are about 100,000 wind turbines (including 10,000 in North America) functioning around the world. According to the World Health Organisation (WHO), wind energy is associated with fewer adverse health effects than other forms of traditional power generation and will have positive effects on health by reducing pollutant emissions. This is confirmed by scientists involved in environmental health and acoustics (Gillis et al, 2009; Leventhall et al, 2003; Leventhal, 2006; Ramakrishnan, 2007; WHO, 2009). Furthermore, noise related nuisance is minimised by introducing new technology and using natural environmental

barriers (Rogers 2006, 2006a; Global Wind, 2009). Based on published scientific reports it can be said that no danger from the presence of wind farms on human health has been demonstrated, but research is still being carried out (CMOH, 2010; Global Wind, 2010). It is also an important point in the context of sustainable development (Udo, Pawłowski, 2010), as the increased use of wind energy, both worldwide and in the EU, seems to be at the moment not only beneficial, but simply inevitable (Soliński, Soliński, Solińska, 2008; Pawłowski, 2010).

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Report from the meeting of the Committee of Forecasting Poland 2000 + in the Polish Academy of Sciences

Sprawozdanie ze spotkania Komitetu Prognoz Polska 2000+ w Polskiej Akademii Nauk

On 20 February 2013 there was a meeting of the Committee Forecasts Poland 2000+, organized by the Presidium of the Polish Academy of Sciences under the direction of professor Michael Keiber. The meeting was attended by about 100 guests from all over Poland and three discussion papers were delivered.

First, professor Bogdan Galwas presented his paper entitled *The world of the first Decade of the twenty-first century. Time for a welfare state*, then futurologist Marek Chlebuś presented his work *The World According Network. Is the Internet propels our reality better?* Finally, professor Lucjan Pawłowski ended discussion with his paper entitled *Conditions of durable and sustainable human development*.

Professor Galwas noted that although the development of science and technology at the beginning of the 21st century looks impressive, world and Europe are threatened by many adverse effects: the economic crisis, unemployment, the sovereign debt crisis of the pension system, the economic stratification of society, desertification of many agricultural areas, the lack of drinking water. The result is that the modern world has become unstable, and many processes are going in the wrong direction, threatening our future. In the speaker's opinion Poland and Europe countries should strive, like the Scandinavian, to build a society in the framework of the social state. But there are also positive phenomena. First of all, in Europe, productivity is unprecedented and will meet all the needs of its residents. Secondly, our population is well educated, there is a good education system. Thirdly, we have a huge scientific potential to inhibit these negative changes and take control of them. However, the further development of the model of the welfare state, or even care, guaranteeing people jobs, adequate income, the possibility of learning are necessary.

Futurologist Marek Chlebuś proceeded with his speech discussing the fact that we have a new system and the old social crisis. There are no new ideas, technology and social organization of society right which are networked. However, life on the Web varies very much from the real life because there is no typical material world and even the concept of nation and state is disappearing. A net-

work where a new economy is slowly developing is the result of that, namely the economy of experience, observations, or wikinomia that requires a new synthesis of the concept of virtual wealth, its production, consumption, distribution, or the new Smith and Marx. Management of the network from the perspective of traditional economics is absurd. We must therefore look for a new models of co-existence the network society and management of traditional life on earth.

Professor Pawłowski in his speech concerning *Conditions for Sustainable Development* points out that the idea of the development refers to the quality of people's lives, to good quality of natural environment and the socio-political system. Undoubtedly, the development of capitalism accelerated the economic development but, at the same time, it also developed the social inequalities that threaten the freedom and equality of people. The current crisis is due to – in his opinion – the lack of ethical behaviour created by the crisis based on the objective of gaining wealth at any cost, which in practice leads to the fact that modern civilization is unsustainably growing. The modern practice of neo-liberal capitalism, where the current capital strength is not offset by the strength of the state, provokes such a situation. This threatens both social and ecological justice. The globalizing economy is so strong that multinational corporations in pursuit for maximum profit can effectively influence the existing legal systems, which together with endless privatization process, results in the avalanche of social inequalities, economic and many environmental problems in the global world. Therefore, we need a global socio-economic system that would guarantee social justice, employment and limited social environmental degradation and natural disasters as well as prevent humanitarian.

After these speeches, which were very interesting, substantive discussions began, mostly undertaken by various neo-liberal thinkers. Participants of the Committee noted that the discussion should be continued because the topic is very important for the future of Europe and Poland.

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