HEINRICH BÖLL STIFTUNG
CROATIA

We Need to Change

Mapping Croatia's potential for sustainable development

Analysis prepared for the **Heinrich Böll Stiftung Croatia**
by **Mladen Domazet, Danijela Dolenec** and **Branko Ančić**

IDIZ ISSP

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‘Economies are teetering. Inequality is growing. And global temperatures continue to rise. (…) We need to change dramatically, beginning with how we think about our relationship to each other, to future generations, and to the eco-systems that support us.’ (UN SG HP GS 2012: 1)

We need to change

— This year the UN is organizing a conference at the highest level, inviting heads of state and government around the globe to take part in the conversation about sustainable development. The United Nations Conference on Sustainable Development (UNCSD) will take place in Rio de Janeiro, Brazil on 20 – 22 June 2012, marking the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED) — which was credited with setting up the architecture for global action on climate change and sustainable development.

Twenty years later the record of global accomplishments in environmental policy is patchy at best, hence the objective of the conference is to "secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges" (UNCSD website[1]).

Since Croatia will be taking part in the conference, this seems like a good moment to ask questions pertaining both to Croatia's past performance with respect to sustainable development, as well as its population's current attitudes and policies aimed at furthering this goal. In the first part this report presents a comparative overview of Croatia's position in key international indicators relevant for sustainable development (Human Development Index — HDI, Ecological Footprint — EF and Happy Planet Index — HPI) in the last decade. The second part of the report analyses attitudes of Croatia's citizens to various topics relevant for making the switch to sustainable development.

The empirical data is drawn from the International Social Survey Project (ISSP), the oldest international research project in the field of social sciences, which takes place in 48 participating countries. Croatia has been participating in the project since 2005, through the Institute for Social Research in Zagreb. However, the survey module on the environment was implemented for the first time in Croatia during the spring of 2011. This report, thus, contains previously unpublished relevant information about the attitudes of Croatia's citizens towards environmental topics, policies, problems and solutions.The analysis of these findings represents the backbone of this report.

Formulation of Croatia's sustainable development policy depends on state's internal capacities, population's attitudes and expectations and the global context. This report combines the international comparative position of Croatia according to several sustainability-relevant measures, overview of some national capacities and analysis of relevant attitudes of Croatia's citizens. It therefore intends to provide up-to-date and relevant evidence for the formulation of Croatia's sustainable development policy. More specifically, the authors hope to provide policy makers with information and analysis relevant for the formulation of Croatia's position at this year's UN conference in Rio de Janeiro. Most importantly for the long run, this study aims to provide the framework for formulating future sustainability policies and activities through broad outlines of Croatia's global position against sustainability-relevant indicators and the expectations and perceptions of its population.

The main findings of the study indicate that Croatia's overall development (HDI) ranks our contemporary society among the most

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1 United Nations Conference on Sustainable Development (2012) http://www.uncsd2012.org/rio20/about.html

highly materially developed societies in the world, whilst this remains both generally unrecognized and unevenly distributed within society. Croatia's Ecological Footprint (EF) and Happy Planet (HPI) indexes on the other hand show that this development is dependent on a comparatively lower impact on the environment than is the case of the most developed countries in the Western hemisphere. The analysis of these comparative indicators reveals Croatia to be uniquely well-positioned for a switch to more sustainable development paths at a comparatively lower social cost (in terms of reduction in its material gain). In addition to that, according to public opinion, Croatia should become more involved in the effort for sustainable development at the global level, as well as put more emphasis on the development of renewable energy sources at home.

But when it comes to prioritising environmental protection over other societal issues, a review of public opinion displays Croatian population as expressing that there are more important things to do here and now. Though a majority of the population sees environmental problems as presenting dangers to themselves and the state as a whole; they are primarily concerned with attaining more of the benefits of the current development path and are not as yet of their own accord regularly practicing behaviour that has environmental sustainability in mind.

Further analysis of public opinion in Croatia reveals obstacles to a full support for sustainable development policies. These appear in the form of social inequalities and the perceived tradeoff between economic growth and job availability, and reduction of their impact on the environment. It is largely expected that greater employment and economic growth necessarily lead to greater human impact on the environment. Groups of lower socioeconomic status and lower level of education know less about environmental problems and available solutions, they are less concerned about environmental issues and they find it harder to see potential complementarities between economic growth and environmental protection. These findings stress the importance of reducing inequalities as an integral part of a politics for sustainable development.

In addition to that, the analysis shows that Croatia's citizens strongly rely on the state when it comes to identifying actors responsible for the switch to sustainability. They do not trust the individual, and they trust private businesses and corporations even less. Croatia's citizens express a strong preference for the state to legislate rules of sustainable development, and they see the state primarily through its sanction and control functions. While the role of the state as the central instance that should coordinate many policies needed for a re-orientation towards sustainability is not in question, these findings point to strong tradition of state paternalism and they suggest there is a need to strengthen democratic impulses of self-governance and self-management in the population. As the UN Secretary General's High-level Panel on Global Sustainability (UNSGHPGS) stressed, a core precondition of long-term sustainable development is broad public participation in decision-making and implementation of key reforms.

Before elaborating the main findings, the following section presents the concept of sustainable development that guided the authors in the analysis. This brief conceptual overview is intended to raise awareness about the urgency of the current global development predicament, and explain the relationship between environmental concerns on the one hand, and social justice and responsible economic activity on the other.

‘Increasing disparities, inequalities and social inequity, growing deterioration of the environment and resources, as well as concurrent energy, food and financial crises, reflect the inadequacy of the world’s current development paradigm. No development model which leaves a billion people in hunger, poverty and socially excluded will be sustainable.’ (UNESCO 2011: 7)

Re-affirming the idea of sustainable development in the 21st century

— As the above quote aptly illustrates, it has become widely accepted that environmental problems cannot be solved without addressing key social problems such as failing economic models, widespread poverty and increasing inequality. If sustainable development is to be understood as a dynamic process of adaptation, learning and action (UNSGHPGS, 2012), then we cannot postpone establishing interconnections between **economy, society and the natural environment.** While the world as a whole is currently far from this development path, the need for far-reaching action is growing ever more urgent. Hence the run-up to the UN conference in Rio is characterised by both hopeful suspense and frustration nurtured by many failed attempts at global coordination towards a more sustainable living. As FRANK BIERMANN and STEVEN BERNSTEIN (2012) recently put it, "humanity is demanding more of the Earth than it can supply, sending us toward tipping points beyond which the planet's air, water and other natural systems can't recover". At the same time as being the global turning point, the upcoming conference in Rio is in "grave danger of being stillborn" (ibid.).

Sustainable or unsustainable practices and development paths are on the whole a matter of humanity's choice, though even under the right choices the obstacles to successful collective action on the global scale are formidable. However, it bears emphasizing that for too many people on Earth the problem is not unsustainable choices, but a lack of choice in the first place. Real choice is only possible where basic human rights and needs, human security and human resilience have been assured. While residents of many world countries are effectively not presented with any choices as to how they will live, Croatia is a society comparatively well-developed so as to be competent to take responsibility over public policies that lead to more or less sustainable living practices for its citizens.

Pessimists are quick to stress that without a profound global reorientation any action Croatia takes on sustainable development is insignificant and will have no effect. The UN's *High-level Panel on Global Sustainability* (UNSGHPGS, 2012) itself recognises that achieving sustainability requires the transformation of the global economy, and that tinkering on the margins will not do the job. On the global level, the said Panel recommends deep reforms that should aim to provide the benefits of material development most urgently to those most deprived by strengthening green growth in the real economy. In addition to that, the objective is to provide for the material needs of the human population in the way that leaves the least irreversible impact on the natural environment.

While only coordinated action of many world countries would result in a measurable impact on our physical environment (especially with respect to climate change), sustainable development policies nevertheless bring benefits to individual countries that implement them: if planned well they can help reduce poverty and social exclusion, bring improved quality of life and increase food and energy independence. In impoverished societies the quest for material gain (conventionally measured through GDP) makes sense in terms of improvement in life conditions, but above a certain level of material development, the combination of human well-being, social inclusion and environmental sustainability becomes a more sensible goal for societies and states (SACHS, 2012). Increasing wellbeing across the whole of society must be an attainable goal for Croatia, given its relatively high level of material development.

As a developed, soon-to-be EU member country, Croatia should take on the responsibility both towards its citizens through developing sustainable practices that improve their quality of life, as well as towards other countries on the global stage through advocating for global action towards sustainable development. The following sections of this report provide evidence with respect to Croatia's international comparative development position, as well as the opinions of its citizens towards environmental issues. These findings are in turn used to make tentative suggestions with respect to direction of public policy developments for environmental sustainability.

What is the main direction of reform that the aforementioned UN Panel advocates and that could be used as a blueprint for planning the switch to sustainable development in Croatia? Simply put, it is the **integration of economic, social and environmental dimensions** of development and endurance. The need to integrate economic, social and environmental dimensions of development so as to achieve sustainability was clearly defined a quarter of a century ago (in the so-called Brundtland report; WCED, 1987). Nevertheless, 25 years later the concept of sustainable development needs yet to be incorporated into the mainstream national and international economic policy debate worldwide and in Croatia. Most often political leaders still regard sustainable development as extraneous to their core responsibilities for macroeconomic management and other aspects of fostering social wellbeing.

Yet integrating environmental and social issues into economic decisions is vital to future success of individual states such as Croatia, as well as the global community on the whole. As LAY (2012) puts it, concluding a review of Croatia's national interests from perspective of sustainability, **stretching natural and social resources beyond their long-term sustainable limits is a policy that is bound to break down catastrophically,** which simply cannot be in the interest of the population and its leaders.

The UN urges all countries to understand that a fundamental prerequisite for achieving sustainable development is broad public participation in decision-making as a safeguard of sustainability of decisions and actions. On the other hand, research has shown that Croatia is found wanting in the communication and coordination aspects of decision-making conducive to sustainable development (KORDEJ-DE VILLA, STUBBS and SUMPOR 2009). In this respect the findings of this report, based on public opinion research, should be a step in the right direction — at least in the sense that we now have the opportunity to find out what citizens of Croatia think about various aspect of environmental policy and sustainable development.

Inequality between the world's rich and poor is growing, and more than a billion people still live in poverty (UNSGHPGS, 2012). Rising waves of protest in many countries reflect universal aspirations for a more just world. Twenty years ago systemic socio-political changes globally were followed by the commitment in Rio to turn the new-found global focus onto sustainable development. Whilst poverty has been reduced globally, it has not been eradicated. The global GDP grew by another 75% since 1990s, and by 40% per capita (due to parallel growth in global population; UNSGHPGS, 2012). While in 1990 43.1% of the global population was living on less than $1.25 a day (PPP), in 2008 the ratio dropped to 22.4% (World Bank data[2]).

This has led to dramatic improvements in the lives of many poor people, whilst at the same time the gap between rich and poor has widened since 1990 both within and between countries. According to the UNDP Human Development Report (2005), 80% of the world's population have recorded an increase in inequality. While 40% of the world's population account for 5% of global income, the richest 10% account for 54% (UNDP 2005: 4). Croatia's income inequality has on the whole followed this trend. The

2 World Bank data on poverty, available at http://povertydata.worldbank.org/poverty/home.

benefits of development over last 20 years have not been equally distributed, whilst the costs to the common goods — such as a country's biocapacity — have grown and continue growing.

Why is this important for a report on sustainable development? First of all, it is important because large income inequalities create insurmountable obstacles to obtaining human development goals. Even more importantly, this is important because "greater equality is the material foundation on which better social relations are built" (WILKINSON and PICKETT 2010: 272). As MICHAEL SANDEL has argued, when material conditions of life and resulting life chances become as vastly disparate as they are today, people live in disassociated realities — and in such a world we cannot hope for a coordinated global action needed for the switch to sustainability. Without a basic sense of shared humanity we cannot engage in democratic debate on the features of a just society (WRIGHT 2011). Therefore, reducing inequality and restoring basic human security must be one of our first objectives if we hope that human communities will make the necessary reorientation towards sustainability.

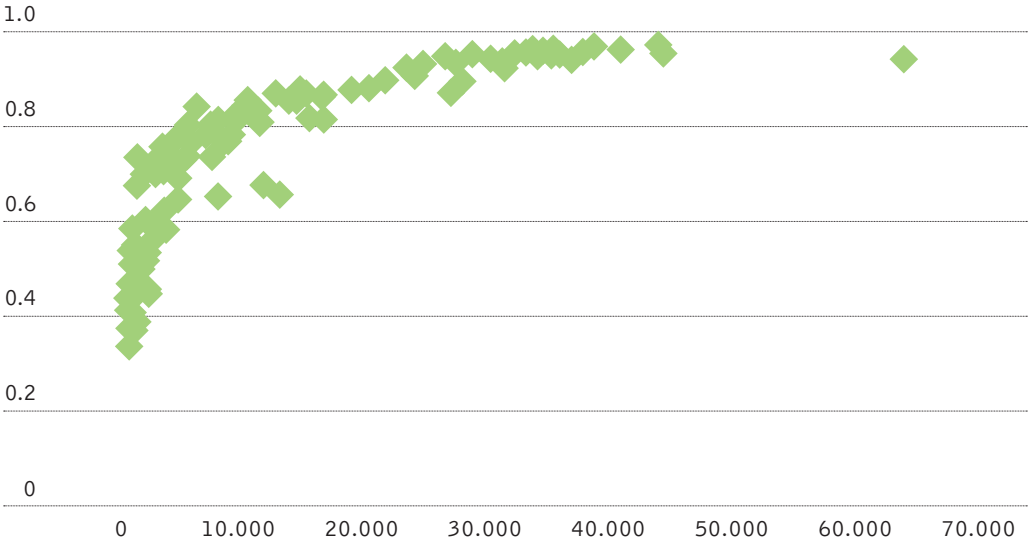

FIGURE 1 **The relationship between HDI and GDP per capita**
Sources: NEF data file (Abdallah et al. 2009)

Croatia's globally comparative position — a small country for a great leap

— With 0.06% of the global population, 0.09% of global habitable surface area and 0.08% of world's CO_2 emissions (UN Statistics Millennium Indicators 2011), Croatia is pragmatically often seen as a silent bystander in global strategy deliberations. If national roles in such processes were a matter of pure representational statistics, there would be nothing more to add to the above numbers and India and China would alone set the global agenda. Yet, as is shown below, indicators of development show that resource depletion, bare numbers of land, population and pollution on a global scale do not tell the whole story. Despite its size, Croatia is in a privileged club of countries benefiting from high development whilst not paying as high an environmental price for it as other developed countries — though its environmental price tag must go down as well.

This section offers a brief overview of Croatia's comparative position with respect to most widely used indicators pertaining to sustainable development: the Human Development Index (HDI), the Ecological Footprint (EF) Index and the Happy Planet Index (HPI). The aim of this section is to uncover Croatia's potential to participate in the global switch to sustainability. In that, Croatia's position concerning the three indices is compared to that of USA, EU15, EU27 and a group of leading emerging economies known as BRICS (Brazil, Russia, India, China and South Africa). Such comparison illustrates Croatia's global position, as well as its position against EU averages. On a regional level, Croatia is compared to the neighbouring countries, some of which are EU members whilst others are not.

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3 More information about the index is available at the UNDP website: **http://hdr.undp.org/en/statistics**

Human development Index

The UN's Human Development Index (HDI) is a composite measure of life expectancy, literacy, education and standards of living for countries worldwide, used for comparative purposes of measuring relative development levels.[3] The data presented here relies on the pre-2011 methodology for calculating the index, which includes life expectancy at birth (a composite of data on population health and longevity); adult literacy rate (with two-thirds weighting); combined primary, secondary, and tertiary gross enrolment ratio (with one-third weighting); and finally the natural logarithm of GDP per capita at purchasing power parity.

The HDI is widely used as the most relevant measure of development, and is often compared to measures such as GDP growth, GDP per capita, GINI index and others to establish key relationships between prosperity and wellbeing. It has long been established that, while the relationship between HDI and GDP per capita is positive and strong, this relationship weakens above 0.7 score on the HDI. In other words, the property of this relationship is logarithmic rather than linear, as shown in FIGURE 1 in the previous page.

Croatia, as well as all other countries included in this report for comparative purposes, fall into the category of very highly developed countries, i.e. into the group where further economic growth carries very little relative potential for human development. The lesson drawn from this fact is that **Croatia should not be postponing sustainable development policies for some more prosperous future, but instead should own up to its global development position and immediately focus on specific improvements of quality of life for its citizens.** In the following graphic below, Croatia's HDI is

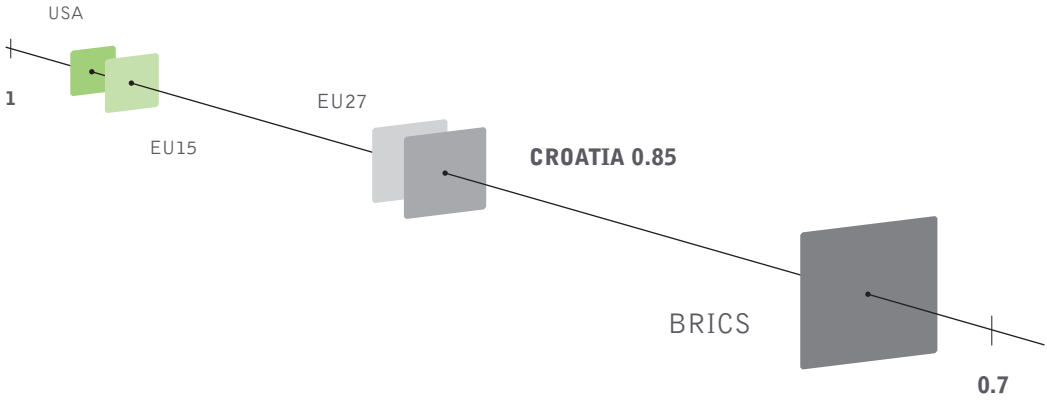

FIGURE 2 **HDI 2005 values and averages for global regional groups**
Sources: NEF data file (Abdallah et al. 2009)

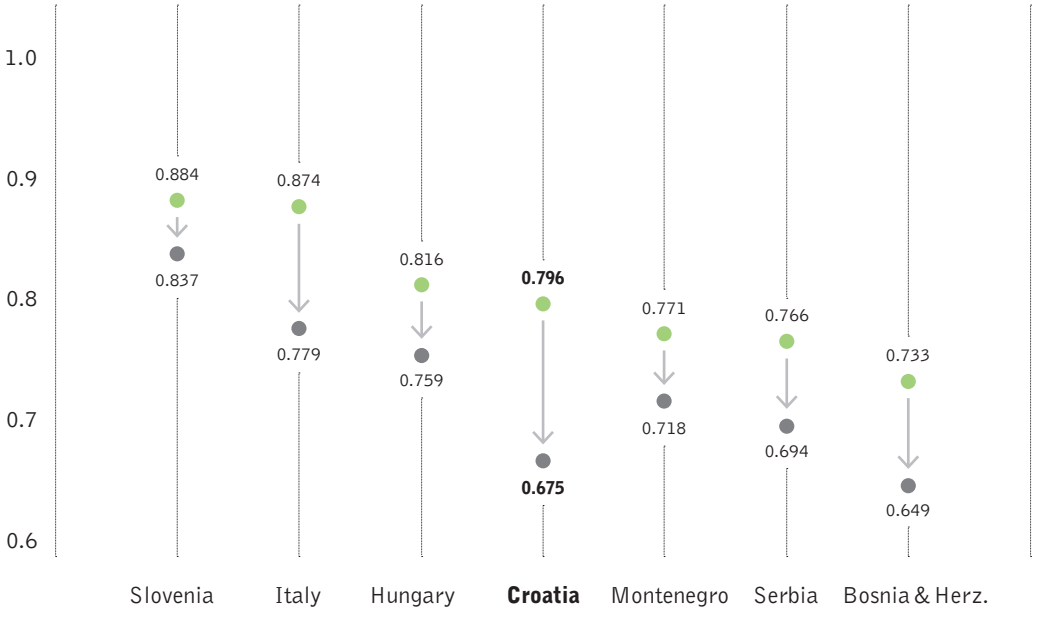

FIGURE 3 **HDI and IHDI 2011 estimates (according to 2011 HDR)**
Source: UNDP; HD Report 2011

compared to the US, EU 15/27, and BRICS averages. These four entities serve to delineate the development space within which it seems relevant to analyse Croatia globally. In the second step, Croatia's neighbouring countries are added to the picture in order to provide additional comparative insight.

As can be seen from FIGURE 2 (left), Croatia's HDI score is practically equal to that of the EU27 average value, while its position is at midpoint between values for USA and EU 15 (higher) and BRICS countries average (lower). All the observed countries and groups of countries fall in the top quarter of global HDI values (UNHDR, 2011), while Croatia's GDP per capita is at around 65% of EU27 average (ANČIĆ, DOMAZET and DOROTIĆ 2011). The index of GDP per capita adjusted for purchasing power parity puts Croatia at 61% of the EU27 average during 2010 (Eurostat 2011). This example illustrates the logarithmic relationship between material development (measured as GDP per capita) and overall levels of development that was mentioned before. **While Croatia is substantially less wealthy than the EU27 average, this does not translate into a comparatively lower level of human development.**

FIGURE 2 serves to illustrate relative positions of countries with respect to the trio US-EU-BRICS rather than their precise positions, and in the following paragraphs it is compared with data for Ecological Footprint and Happy Planet indices. In the figures generally shading from green (good) to black (bad) indicates good-bad ratios.

Still considering FIGURE 2, when Croatia's position is compared to that of its neighbouring countries, the picture conforms to expectations: compared to all its neighbours who are EU member states (Italy, Hungary, Slovenia), Croatia's HDI score is lower, while on the other hand it outperforms Bosnia and Herzegovina.

After the 2010 Human Development Report, the UNDP introduced a new methodology of calculating the scores, which is why certain discrepancies appear when newer data is used. Nonetheless, according to the latest Report's comparable tables (UNDP, 2011a: 131) Croatia's HDI has grown steadily over the last decade, though resulting in slight drop of comparative global HDI rank. Overall, for major countries and groups of interest to this study HDI rank positions remain relatively stable. It is possible that this reflects the limit of the current development model where sustained GDP growth over the 15 years preceding the last global economic crisis yielded no globally comparable improvement in HDI.

We turn to the analysis of the more recent HDI scores for Croatia and its neighbouring countries because in its new methodology the UNDP introduced the inequality component to the index, producing a new inequality-included index (IHDI). As a result, when the absolute HDI value is considered (shown in FIGURE 3), Croatia is positioned midway between EU and non-EU neighbouring countries, but it drops below Montenegro and Serbia after the inequality index is included (marked as IHDI in FIGURE 3). **The fact that its development level is reduced by 15% due to inequality makes inequality a serious concern for Croatia's development path. It makes its relative drop in development due to inequality comparable to that of the United States [4].**

Next, the fact that on certain segments of the HDI that reflect broader social infrastructure, Croatia also lags behind the club of very highly developed countries, suggests its current development model may not be able to yield overall growth of human development in the near future. For example, as shown in FIGURE 4 (p. 17), the mean expected years in education component of the HDI places Croatia behind some less developed countries and significantly below neighbouring countries with shared educational history, such as Slovenia. Though the number of mean expected years in education for Croatia has grown over the last two decades, this has been a comparatively slow progress.

4 United States' 2011 HDI drops from 0.910 (HDI) to 0.771 (IHDI) when inequality is included, which is also a loss of 15% of value, as in the case of Croatia.

This suggests a potential weakening of the universal benefits of current development in the future, when benefits of current schooling should contribute to individual and social wellbeing in the population.

Finally, before concluding the section on HDI analysis and moving onto other indicators, a brief comment on the appropriateness of using country-level data. It is often remarked that Croatia exhibits great regional differences in development, and hence any country-level data hides important aspects of reality. This report takes regional differences into consideration, as is shown in the following sections, but the authors consider globally comparable data such as the HDI an important source of information that must not be overlooked in an analysis of Croatia's potential for sustainable development. In addition to that, Croatia's regional differences surely do not exceed those of the overall European Union, the United States, China or BRICS as an aggregate value covering different politically loosely tied countries. While the study of regional differences surely has merit, Croatia is a small country of around 4.3 m inhabitants, and the socio-economic and cultural ties between Croatian regions are still comparatively strong.

Ecological Footprint

The Ecological Footprint (EF) is a measure of human demand on the Earth's ecosystems. It is a standardized measure of human utilisation of natural capital that must be contrasted with the planet's ecological capacity to regenerate. It is expressed in the figurative amount of biologically productive land and sea area (global average hectares) necessary to supply the resources a human population consumes, and to assimilate associated waste. Globally the situation is not bright as the average global citizen has an eco-footprint of about 2.7 global average hectares (GHA) while there are only 1.8 global hectares of bio-productive land and water per capita available on earth. **This means that humanity has already overshot global biocapacity by 50% and now lives unsustainably by depleting stocks of "natural capital"** (REES, 2010). **As the current stable estimate of global sustainable biocapacity centres on 1.8 gha, all countries and groups of countries used for comparison with Croatia (FIGURE 5) have overshot the global average biocapacity, and are extracting benefits for their populations from less developed countries and future generations.** But while the BRICS aggregate shows a slight overshoot, where some countries within the group are within the sustainable global biocapacity per capita and are therefore lenders of "natural capital", others have overshot it by threefold or more.

The 2004 Living Planet Report (WWF, 2004) revealed interesting trends regarding increases in ecological footprint. By 2001 global humanity required 1.3 times more global hectares of productive area per person to sustain its lifestyle than back in 1961. Already in 2001 globally the figure was at 2.2 gha, while there was only 1.8 gha available — **this overshoot is of course possible only for a limited period of time.**

According to the Millennium Ecosystem Assessment (2005; see also HASSAN, SCHOLES and ASH 2005), a comprehensive global report on the health of the planet, "humankind's ever-growing demands for natural resources are seriously damaging the ecosystem 'services' that support life. Of the twenty-four services it evaluated, such as fresh-water supplies, clean air, genetic resources and fisheries, no fewer than fifteen are being degraded or used unsustainably. (…) Today, our larger and more numerous 'ecological footprints' are clearly visible from space" (MOSLEY 2010:1).

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5 Since the drafting of this study new National Footprint Accounts have become available but no significant change of relative trends reported here is revealed. Croatia's own per capita footprint and biocapacity have increased slightly to 3.94gha and 2.6gha respectively. The latter value is partly affected by inconsistencies in sources addressing unharvested cropland. The subsequent Footprint Accounts will attempt to address and/or correct this issue. **Though this slightly affects Croatia's footprint and available biocapacity, the overall ratios of footprint components remain largely unchanged** (National Footprint Accounts 2011 Edition 1.0 with minor adjustments, www.footprintnetwork.org. As of May 7, 2012).

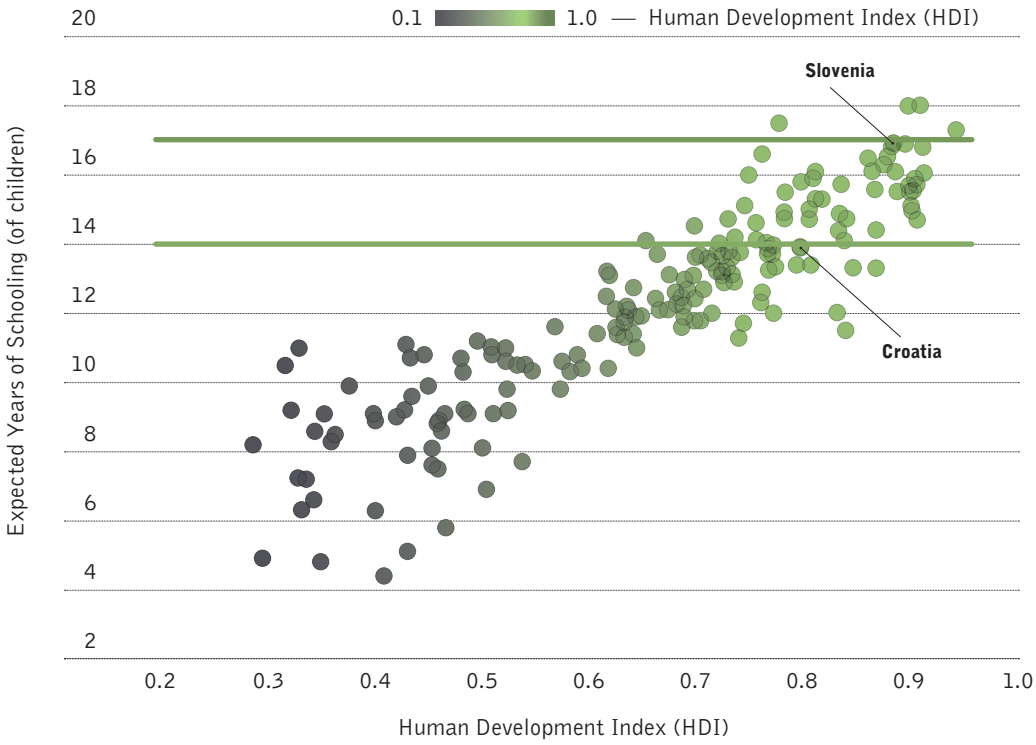

FIGURE 4 **Expected Years of Schooling and overall HDI score for all countries (2011), Croatia's and Slovenia's positions**
UNDP Data Explorer (http://hdr.undp.org/en/data/explorer)

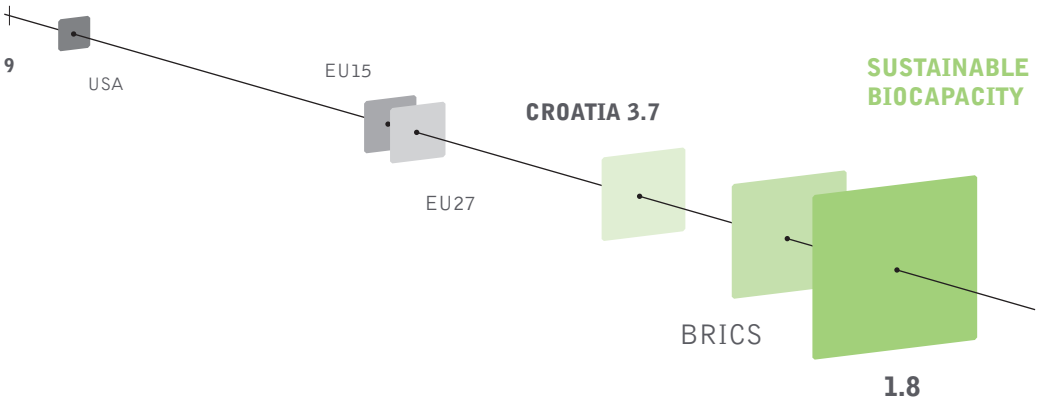

FIGURE 5 **Ecological Footprint 2007 values and averages for global regional groups[5]**
Source: National Footprint Accounts 2010 edition, www.footprintnetwork.org.
Extracted on October 13, 2010

Looking at the ecological footprint of the EU more specifically, it has risen by almost 70% since 1961 (WWF, 2005). When it was first measured in 1960s, Europe's footprint was approximately matched by its available biocapacity, whilst today it stands at over double the biocapacity. Europeans now require 4.9 gha per person to provide for their lifestyle, while the continent can only supply 2.2 global hectares per person. The greatest increase has been recorded in the most recent decade. With only 7% of the world population, the EU uses 17% of the biosphere's regenerative capacity.

This means that Europeans use resources from the rest of the world to support their lifestyles, in large part from poorer countries. At the same time, many people living in less developed countries have been experiencing involuntary decline in their quality of life (ibid.). In addition to that, "in middle and low income countries the average person's footprint has changed little over the past 40 years, and declined by 8 per cent in the ten years before 2000" (ibid. p. 15). These facts inexorably point to the conclusion that sustainable development policies must be implemented so as to address issues of fair distribution and social justice.

FIGURE 5 (p.17) shows Ecological Footprint data for Croatia and its relative position with respect to the trio US-EU15/27-BRICS. Like in FIGURE 2, traffic light colours from red to green indicate good-bad ratios.

According to 2007 Ecological Footprint data presented in FIGURE 5 Croatia is positioned above BRICS countries but below EU 27 in the demand for natural capital it employs to maintain its development level. In this case the difference between EU27 and EU15 is rather small, as is visible in FIGURE 5.

FIGURE 6 (right) compares Croatia's Ecological Footprint in 2004 and 2007 with that of its neighbouring countries. As can be seen from the Figure, Croatia's ecological footprint slightly increased from 2004 to 2007, just as Italy's and Slovenia's, whilst Hungary's, Serbia's and Bosnia and Herzegovina's exhibits a slight decrease in the same period. The United State's footprint of 8.0 gha in 2007 likewise fell in the same period and now stands at just over double of Croatia's.

According to the Ecological Footprint as a measure of societies' demand on ecosystems, Croatia is significantly below neighbouring Slovenia and Italy, but above Hungary, Bosnia and Herzegovina and Serbia[6]. **However, both Croatia and its neighbouring countries, as well as the US and EU27, overstep their own biocapacity.** Among the BRICS countries Russia and Brazil have footprints lower than their own biocapacity, whilst India, China and South Africa's footprints are higher than their available biocapacities.

Although historical and present globalisation processes suggest that biocapacity should be shared globally as a common good, inviting a similar distribution of benefits brought about by large national footprints, it is clear that those countries that overstep their own land-areas' biocapacities endanger long-term survival of their populations.

It is worth noting that **Croatia's current population requires ¾ of another Croatia to maintain its lifestyle** average[7]. This is the debt taken from future generations, plus — given current inequalities in material development within the country —this debt is being used disproportionately. On the other hand, this uneven distribution of material development suggests a similarly uneven distribution of ecological footprint, making **some Croatian communities much closer to sustainable levels than the country average.** This would make their **switch to sustainable development less demanding** than for the whole of the country.

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6 There is no data available for Montenegro.

7 Further ½ of another Croatia according to the latest national footprint accounts, which still need to gather more consistent data on the ratios of built-up and unharvested land on Croatian territory (probably due to war affected areas and decline in agricultural production).

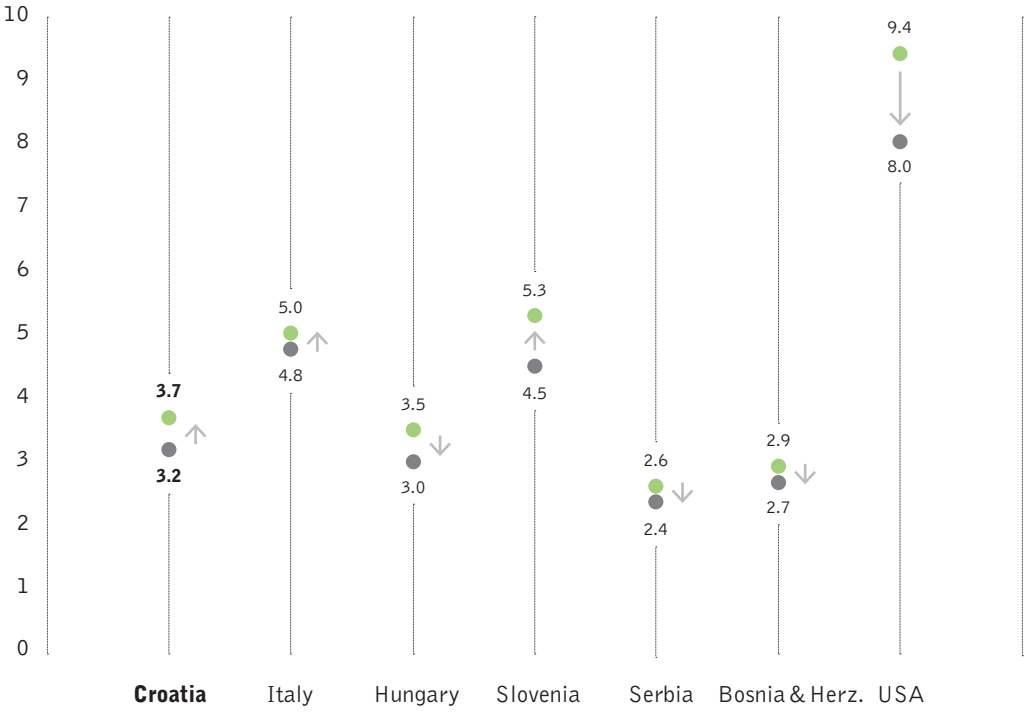

FIGURE 6 **Ecological Footprint in 2004 (red) and 2007 (green) for Croatia, neighbouring countries and USA**

NEF data file and National Footprint Accounts (www.footprintnetwork.org)

If there has been a relative improvement in Croatia's HDI value over the last few decades, it has come at a cost in demand on country's ecosystems. A more detailed look at the components of the footprint, as given in Šimleša (2010a), show that since 2001 Croatia's footprint has been continually growing, whilst its own biocapacity has been dropping from 2.8 gha in 2001 to 1.8 gha in 2006. Main contributors to the size of the footprint in Croatia are energy generation and food production activities, and these are the areas with greatest potential for Croatia's shift towards a more sustainable maintenance of development. The components are shown in FIGURE 7 (p.20). Current food production practices contribute to the footprint both through direct CO_2 emissions and through other ecosystem interventions in grazing, crop growing and fisheries. Likewise, energy generation contributes to the state's footprint both through fossil fuel burning (CO_2 emissions) and hydropower accumulation.

However tiny from a global perspective, overall CO_2 emissions are the most significant contributor to Croatia's overall unsustainable footprint and emissions reduction could help Croatia set course for a more sustainable existence. By seriously reducing, or even eliminating, the CO_2 segment of the footprint without raising absolute demands of other footprint segments, Croatia could almost reach locally sustainable level of development and a globally leading position. A similar statement holds for most of its South-East European neighbours, opening up space for a regional carbon-elimination strategy.

CO_2 per capita emissions from 2008 data, which were affected by the start of the global economic downturn, place Croatia close to Hungary and Serbia, but below Slovenia, Italy and Bosnia and Herzegovina (UNDP 2011a). The other GHG emissions hold the same relative position (ibid.). This makes Croatia's CO_2 per capita emissions a third of those of the United States, half of Russia's, but

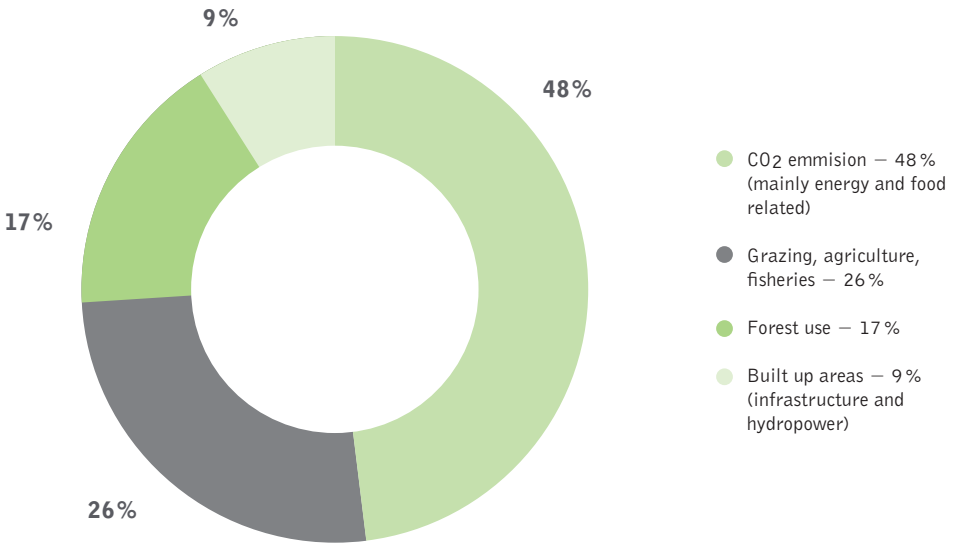

FIGURE 7 **Croatia's 2007 Eco Footprint components**
Source: 2010 Living planet report (2007 data)

triple those of India or Brazil. Energy generation, as one of the largest contributors to CO_2 generation, is in Croatia 85% fossil fuel based, similar to the situation in Italy, Serbia and Bosnia and Herzegovina, as well as in the United States, Russia and China (UNDP 2011a:146).

Slovenia, Hungary, Brazil and India rely less on fossil fuels for primary energy generation. Brazil, India, South Africa and Slovenia also have a greater overall reliance on renewable energy sources than Croatia does. **Croatia, on the other hand, has as yet untapped potentials for increase of renewable sources in the energy mix** (ŠIMLEŠA 2010b). Energy consumption by households also reflects Croatia's developmental aspirations. Whilst the average annual energy consumption of Croatian households (15 MWh) is still somewhat below the European average (18 MWh), it is continually growing whilst the European one has been falling over the last decade (BOROMISA et al. 2011). Since heating and cooling of residential units takes up to 80% of this energy consumption, the greatest savings in household energy consumption and subsequent CO_2 emissions can be made through temperature insulation.

Croatia is also using a comparatively lower proportion (0.8%) of its energy, mineral and forest resources in generation of its Gross National Income than is the case with BRICS countries and Bosnia and Herzegovina, but significantly more than its neighbouring countries (UNDP 2011a:146). As is shown in TABLE 1 (right), Croatia's forest coverage as a potential neutralizer of atmospheric GHGs and a renewable energy source is globally miniscule but regionally notable (cf. ŠIMLEŠA, 2010b). According to the Natural Assets and Human Well-being report (MEA, 2005), Croatia is still one of the global examples of countries that receives more economic benefits (through grazing and timber) from its forests than the same forests' non-economised values (carbon sequestration, watershed protection etc.). This makes **Croatian forests** an important national resource both for economic and non-economic value, and one of the **important ecological assets for this century and future generations.**

Next, it is worth noting the vast freshwater reserves that Croatia prides in as the potential for the future. According to the HDR (UNDP 2011a) **Croatia in the last decade used only 0.6% of its renewable freshwater resource,**

whilst according to the Water Footprint Network its average per capita water footprint (1688 m^3/yr per capita) was above the global average (1385 m^3/yr per capita) and almost 40% of this footprint was generated outside the country (***www.waterfootprint.org;*** MEKONENN and HOEKSTRA, 2011). This means that despite large national freshwater reserves **Croatian citizens are using other countries' water resources through the goods and services they consume,** and consume more water than the average global citizen.

As the previous sections have been making clear, just as other countries around the world, Croatia is facing limitations to its hitherto practiced models of growth. In addition to that, with increasingly apparent consequences of irreversible environmental changes, and with global food insecurity rising, Croatia will have to rely more on its own resources. At the same time, the price of fossil-fuel-based fertilizers and the limitations on global trade are likely to exert further pressures (UNSGHPGS, 2012). In a potentially aggravating situation of rising prices of basic commodities, those parts of Croatia's population that are at risk of poverty will be pushed into even harder circumstances.

Globally there is enough food produced today to feed the growing population comfortably, but access to food has reversed with both hunger and food prices increasing. This is particularly damaging for small import-dependent countries, such as Croatia. At the same time the drivers of the last century's green revolution — fertilizers, fossil fuels, water and land availability — are running out. Food production and access to food are becoming a global issue with important reflections in Croatia. Given the global projections for food security, Croatia's food production needs to increase, both for reasons of local food security and international trade potential. However, this has to be based on radically different practices from those that currently make up a large segment of the unsustainable national ecological footprint.

However globally small in overall volume, **Croatia's CO_2 per capita emissions are above sustainable limits, they have grown substantially over the last two decades, and will need to decrease in line with European and global carbon-cutting efforts. Whilst food production makes up to 30-40% of those emissions** (ZNAOR 2009) the rest is largely made up of energy production which will have to change its resource base to contribute to emissions reductions.

After food, electricity may be the most sought after commodity in both the developed and the developing world, locked into current development paths, and Croatia is probably no exception with even basic comfort demands such as heating and cooling higher all year round with projected climate change. Whilst 20% of the current world's population lack access to electricity, the IEA estimates that universal access to modern energy services by 2030 is achievable at low cost and modest impact on the global environment (UNSGHPGS, 2012). Croatian hydropower can in

Slovenia	62.0
Bosnia and Herzegovina	42.7
Montenegro	40.4
Croatia	**34.2**
Italy	30.6
Serbia	29.6
Hungary	22.4

TABLE 1 **Forest area as % of total land area of Croatia and neighbouring countries**
Source: UNDP 2011a

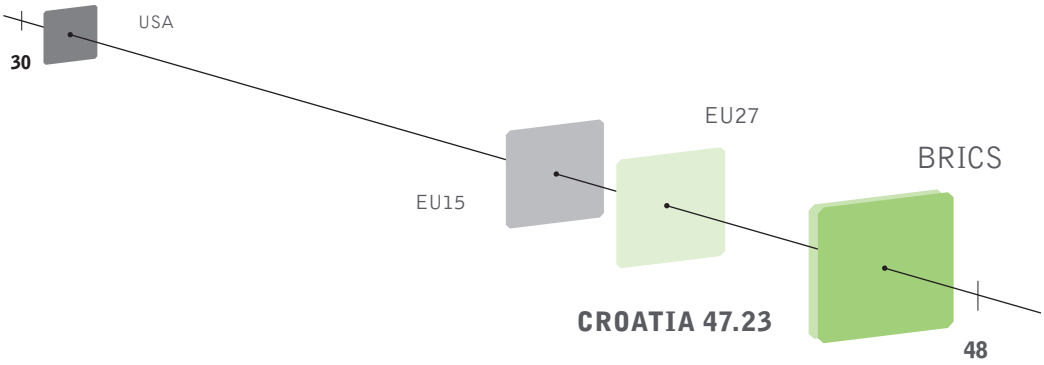

FIGURE 8 **HPI 2009 values and averages for global regional groups**
Sources: NEF data file (Abdallah et al. 2009)

periods of peak potential (winter/spring) generate amounts of electricity comparable to those generated in fossil-fuel based power-plants and imports of electricity combined (around 50% of electricity consumption; CBS 2012), but all other renewables have a negligible contribution (under 2%) to the mix. It is encouraging, though, that this contribution has been growing steadily over the recent years.

With the renewable energy's share of power, heat and transport growing strongly at the global level in recent years, Croatia has potential to develop jobs and energy sources from solar, wind and biomass sources. The drastic change required to make the timely switch to sustainable development path is best initiated in sectors where society currently has the greatest potential for them. This is not to say that the required change is not all-pervading and systemic, but only that we should seek to capitalize on potential evident today. **In terms of its natural resources — freshwater availability, insolation, biomass, arable land — Croatia is in a good position to reap benefits, against comparatively low costs, of choosing sustainability as its development strategy.**

However, a potential threat lies in the fact that Croatia's citizens are insufficiently aware of these potentials, as is shown in subsequent sections of the report. Since Croatia is marked by growing social inequalities, many survey respondents see environmental protection and economic development as a zero-sum game. In a telling reflection of global obstacles to improved cooperation, Croatia's society needs to immediately improve life conditions of its less advantaged members so as to protect and secure the future benefit of all.

Happy Planet Index

The Happy Planet Index (HPI) is an index of human well-being and environmental impact that was introduced by the New Economics Foundation (NEF) in July 2006[8]. The index is designed to challenge well-established indices of countries' development, such as Gross Domestic Product (GDP) and the Human Development Index (HDI), which are criticised for not taking

8 More information about the index available at: http://www.happyplanetindex.org/

sustainability into account. It includes a measure of the environmental costs of pursuing increase in development indices (ecological footprint) as a more suitable indicator of inroads towards sustainable development. The HPI is best conceived as a measure of the *environmental efficiency of supporting well-being* in a given country or in other words as a trade-off between material development and wellbeing on the one hand and the environmental impact on the other.

Each country's HPI value is a function of its average subjective life satisfaction, life expectancy at birth, and ecological footprint per capita. The exact function is more complex, but conceptually it approximates multiplying life satisfaction and life expectancy, and dividing that by the ecological footprint. If material development were correlated with happiness, we could say it represents a ratio between HDI and Ecological footprints presented above.

The HPI values presented in FIGURE 8 are from the The (un)Happy Planet Index 2.0. Why good lives don't have to cost the Earth report (ABDALLAH et al. 2009). They show Croatia's HPI value above that of EU27 average, and the BRICS average. In fact Croatia's "happiness" is costing the planet less than that of aggregate average EU countries and of USA, which is a positive sign despite the growing and unsustainable footprint. On regional scale (not shown in the figure), its HPI is just below that of Serbia, but above that of Italy, Slovenia, Bosnia and Herzegovina, and Hungary.

The BRICS aggregate index for the group of emerging economies — Brazil, Russia, India, China and South Africa — hides great inequalities in HPI. South Africa and Russia are the 'unhappy' end of the spectrum, with HPI of 29.7 (dark grey) and 34.5 (dark grey) respectively, way below HPIs of other countries in the group, EU27 and Croatia. The other three have HPI values above the suggested aggregate value (Brazil: 61, China: 57 and India: 53; all green), leaving Croatia progressively behind and within the range of European countries such as Germany, Finland, Austria or Albania. Nonetheless, Croatia's overall HPI performance is marked as a better balance of wellbeing and ecosystem cost than is the case with those European countries of a similar HPI value. **The lesson here is that Croatia has good preconditions for reorienting towards sustainable practices while maintaining higher levels of development and striving for a sustainable ecological footprint.**

Due to its membership in a relatively unique club within Europe, characterised by high level of material development and a high Happy Planet Index, Croatia has an opportunity to be one of the leading countries in a global switch to sustainability. At the same time it must be keenly aware of its currently unsustainable position of over-capacitated ecological footprint, and unsustainable GHG emissions and primary energy base. Croatia is, therefore, at the right developmental point to make a turn towards sustainability strategies whilst comparatively ahead in the ecosystem demand and material development (though distributed unequally).

Whilst it faces a challenge in the future of maintaining the benefits of material development with lessening of the impact on the planet, it is required to make much less of a radical rejection of the material factors contributing to its population's wellbeing than is the case with, for example, United States or Hungary. Whist the world needs to change, and change dramatically (UNSGHPGS, 2012), **Croatia currently holds a globally advantageous comparatively positive trade-off of high material development and low ecosystem demand.**

In the ISSP survey (presented in the next section) the respondents were asked whether they thought that Croatia was doing too much or too little with respect to global fight to protect the environment. As is shown in FIGURE 9 (next p.), a majority of 56% respondents thought it was doing too little for the protection of the environment on the global scale.

This finding further strengthens the **call for the**

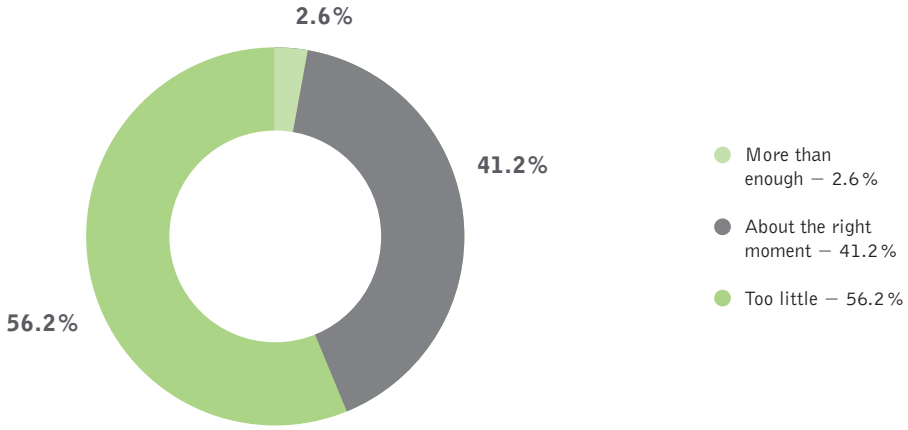

FIGURE 9 **Croatia is doing ... for protection of the environment on the global scale**

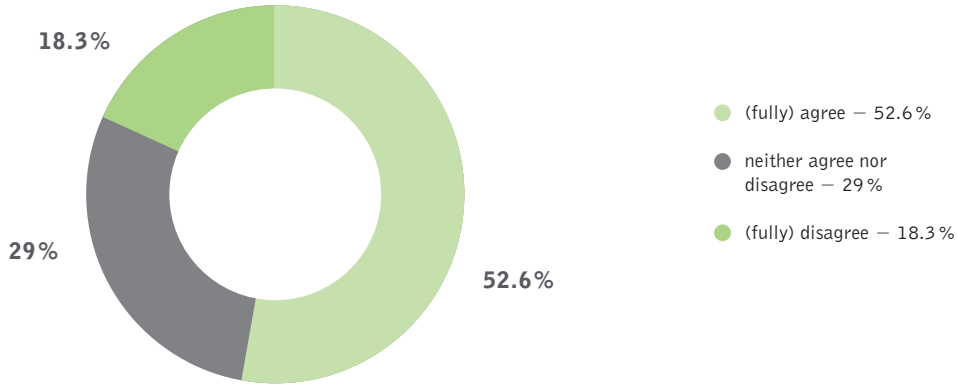

FIGURE 10 **Statement: 'We should expect less financial contribution and overall effort from poorer countries than rich countries to protect the global environment'**

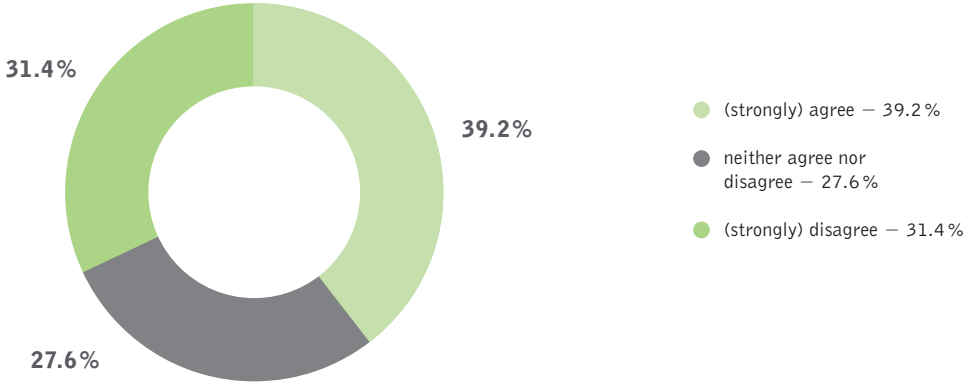

FIGURE 11 **Statement:'We worry too much about the future of the environment and too little about current prices and availability of jobs'**

country's more active involvement in the global action for sustainable development and suggests that Croatia's citizens might be willing to support the country's more active involvement on the global stage when it comes to environmental protection and sustainable development. This citizens' opinion is partly supported by the ESI index rating Croatia's international collaborative efforts below those of its peer group of countries and as the weakest of five components of its environmental sustainability assessment (ESTY et al. 2005).

Another important issue which underlies this report is the assumption that not all countries share the responsibility for global action on sustainability to the same extent since important differences exist in overall affluence and wellbeing, as well as past and present use of available resources. Here it is again important to consider whether Croatia's citizens agree with such an ethically based judgement, and the ISSP survey helps uncover this. FIGURE 10 (left) shows the extent to which respondents agreed with the statement that we should expect less financial contribution and overall effort from poorer countries than rich countries in the effort to protect the global environment.

The majority of respondents (53%) agree that we should expect less financial contributions and overall effort from poorer countries in contrast to rich countries, signalling at least a superficial recognition among respondents of the different roles and expectations from groups of countries on the global level.

These initial insights into public opinion in Croatia suggest a tentatively encouraging developmental perspective. However, other findings of the ISSP survey cast a more complex picture of public opinion with respect to environmental policy and sustainable development. As a preview, the following FIGURE 11 (left) shows whether respondents thought that we worry too much about the future of the environment and too little about current prices and availability of jobs. As can be seen, 39.2% agreed that there might be too much fuss about environmental issues instead of focusing on the pressing problems of availability of employment and the deterioration of standards of living.

At first glance this finding is rather inconclusive, since the respondents are divided roughly into thirds among the given answers. Nevertheless, a slim plurality of respondents (39.2%) agreed that **too much concern exists over the environment in a situation of dire economic circumstances and high unemployment.** Having in mind the fact that environmental concerns rarely if ever dominate the public agenda and certainly have not represented a political priority for any Croatian government, this might be interpreted as a worrying sign.

Croatia's comparatively good position for a reorientation to sustainability may melt in the face of political and social barriers to society's wholehearted switch to sustainability. Though 31.4% of citizens who prioritise environmental protection above immediate economic gains are a positive base for social change, it is certainly not a political community representative of the whole of Croatian society. To make the required switch to sustainable development, **Croatian society should find a way of making standard of living and life chances more evenly distributed** among its members.

However, part two of the report provides a more nuanced analysis of public opinion on sustainable development. The next sections introduce key elements of the analysis and present the findings of the ISSP survey.

About the International Social Survey Programme

— The second part of this report analyses citizens' perceptions regarding environmental issues and challenges. While some preliminary data from the ISSP survey has already been introduced, in this part the ISSP survey on the environment, implemented in the spring of 2011, represents the main focus of analysis.

The International Social Survey Project (ISSP) is the oldest international research project in the field of social sciences, and it takes place in 48 participating countries. Croatia has been participating in the project since 2005, through the Institute for Social Research in Zagreb. Apart from the module on the environment, the research programme also encompasses topics such as religion, social inequality, national identity and citizenship, and others.

The 2011 module on the Environment was implemented by using the face-to-face interviewing method, **on a nationally representative sample of 1210 respondents in 81 settlements in all administrative counties of Croatia.**

The sample is nationally representative according to

- the proportion of the population in the six regions (Zagreb; Northern Croatia; Slavonia; Lika, Kordun and Banovina; Istria, Gorski Kotar and Northern Adriatic; and Dalmatia);
- 4 sizes of settlements (up to 2.000; 2.001–10.000; 10.001–100.000 and above 100.000);
- age and gender, based on the last population census in 2001 (data from the Croatian Bureau of Statistics).

Settlements sized up to 2.000 and 2.000–10.000 inhabitants were randomly selected, and the same procedure was conducted with respect to cities with between 10.000 and 100.000 inhabitants. All cities with more than 100.000 inhabitants were included in the sample. Households and respondents were randomly selected. Every sixth household was chosen, starting from a baseline, while within households respondents were chosen based on the birthday principle (whoever has their birthday first).

Until the implementation of the ISSP survey on the environment there had been no systematic surveys or measurements of attitudes towards ecology and environmental issues in Croatia, only isolated pieces of research by a handful of interested scientists (see CIFRIĆ, 2005; 2004; CIFRIĆ & NIKODEM, 2006). As a result, there has been no systematic insight into how well Croatia's citizens are informed about environmental issues or about their attitudes on this topic. The ISSP survey not only brings researchers new possibilities of exploring public opinion with respect to environmental topics, but it enables the comparison of Croatia with other countries participating in the research programme, and opens up the possibility of longitudinal studies in the future.

Social characteristics of Croatia's population

— If tackling environmental challenges is intricately linked with addressing problems of poverty and social exclusion, it is particularly relevant to establish whether social factors such as the person's level of education and income, as well as the region where she comes from, are related to their attitudes towards the environment. While issues of educational attainment, poverty as well as the well-known problem of uneven regional development in Croatia are each deserving of serious studies in their own right, in this report they are operationalized into simple measures to enable empirical analysis. The following sections provide information that justifies the focus on poverty, educational attainment and regional development as important social phenomena that pertain to the development of environmental policy in Croatia, and they introduce the simple measures derived from survey items to capture these important concepts.

Until the recent economic crisis, problems of poverty and inequality rarely entered public discourse in Croatia. The first national survey on poverty in Croatia was only carried out in 1998 and published in a World Bank study in 2000 (ŠUĆUR 2011). After 2001 the Croatian Bureau of Statistics started regularly publishing poverty statistics, and the data reveal a stable trend over the last decade in which the relative poverty rate is around 17–18%[9]. Unfortunately, these statistics reveal that **Croatia's relative poverty rate is higher than the EU27 average; the country belongs to the top quarter of EU countries with the highest poverty rates** (ibid.) Relative to other post-communist countries, Croatia is doing worse than Slovenia, the Czech Republic or Hungary, but better than Romania, Bulgaria or the Baltic states (ibid.). When compared to some older EU member states, poverty rates in Croatia are comparable to those in Italy, Portugal, Greece, Spain and the UK. Similarly to relative poverty rates, the GINI coefficient for Croatia has been stable in the period 2001–2009, in between 0.27 and 0.29. In this period Croatia was at the EU27 average, while some of its neighbouring countries are performing better. For instance, Slovenia, the Czech Republic and Hungary all have substantially lower GINI coefficients of ≤0.25. However, in 2010 the GINI coefficient for Croatia rose to 0.32, **signalling a recent growth in inequality** (CBS Release 14.1.2).

The measure of poverty that we use is rather crude — it is based in personal income, and calculated by dividing the respondents into two groups: those with monthly incomes below the minimum wage and those above this threshold. Based on the Minimum Wage Act (Official Gazette No. 67/2008), the minimum wage between June 2011 and May 2012 in Croatia is 2.814 Kuna.

Active population of Croatia in January 2012 was 1.705.391 people, out of which there were 1.371.040 in employment[10] (CBS Release No. 9.2.1/2). The most recent data on monthly salary groups of those employed are for March 2011. In that month 959.045 people received payment for full-time work, and around 15% of people from that total earned 2.800 Kuna or less — which amounts to over 140.000 people. While these people could be classified as

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9 The CSO uses an EU indicator of 'relative poverty rate' which is calculated as the 60% of the median national income. The figure is for the period 2001 – 2009.

10 The largest number of those working work in legal entities (1.135.504), while 205.501 people work in crafts, trades and as freelancers, and another 30.351 are private farmers.

working poor, another 342.951 people are unemployed[11]. The official registered unemployment rate in Croatia in January 2012 was 19.6% (CBS Release No. 9.2.1/2), compared to 10.2% average unemployment in the EU27[12]. In this group, 42% are the long-term unemployed, a group that is particularly exposed to the risk of social exclusion and poverty. Finally, for a more complete picture of socioeconomic characteristics of Croatia's population it is important to note that there are 1.215.539 retired people. While persons belonging to the Croatian Army or War Veterans groups have on average somewhat higher monthly pensions, the large majority of pensioners (over 1.1 million) in Croatia receive a monthly pension of 2.147 Kuna — i.e. an amount below the minimum wage. When all these groups are added up, it seems that around 35% or more of the Croatian population makes a living on less than 2815 Kuna[13] per month. This data seems to justify the focus of this report on the phenomenon of poverty. Regarding the question of how poverty relates to environmental issues, on the one hand economic strain on one's life circumstances may make any behavioural change more difficult, including environmentally friendly behaviour. This is particularly pertinent when economic development and environmental responsibility are framed as a zero sum game where either one or the other must suffer. On the other hand, some types of poverty may be driving people towards more environmentally aware thinking and behaviour.

In the survey dataset, while for the measures of educational attainment and geographical location a near 100% of respondents provided information, in the case of personal income 64% of respondents provided this information. Since we cannot be sure of the type of bias that this self-selection in providing the answer on income has produced, the findings related to personal income must be interpreted with a dose of caution and not considered as reliable as the other measures used.

It has been well established in the literature that poverty is part of the "vicious triangle" with unemployment and social isolation, while all three of these negative phenomena are related to educational attainment (UNDP Croatia 2006). One of the most effective ways of reducing social exclusion is by extending educational attainment and prolonging compulsory education. Extended stay in compulsory education has been shown to reduce educational and by extension social exclusion. While EU member states have legislated nine-year long compulsory education, in Croatia compulsory education still lasts eight years even though this has repeatedly been assessed as suboptimal (ibid.). In addition to that, like elsewhere in the world, in Croatia there is also a strong negative correlation between poverty risk and the level of education (NESTIĆ and VECCHI 2007). The attainment of secondary education qualification is the threshold above which the probability of being poor becomes lower than the national average; only 5% of the poor live in households whose head has completed general secondary schooling (ibid.) With respect to educational attainment, an item in the survey directly asked the respondents to mark whether they completed only primary schooling or less, three-year secondary schooling, four-year secondary schooling or some form of tertiary education. The report uses this item to analyse the relationship between educational attainment and attitudes towards environmental topics.

In the third step, performance regarding poverty and educational attainment levels tend to cluster, together with other important differences, into strong regional differences across Croatia. An item in the survey asked the respondents to place themselves into one of the following six regions of Croatia: Istria and the Northern Adriatic, Dalmatia, Lika and Banovina, Slavonia, Northern Croatia or Zagreb.

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11 In February 2012, data available at the Croatian Employment Service website: http://www.hzz.hr/default.aspx?id=3823

12 Eurostat official data for February 2012.

13 According to the still unofficial 2011 Census, the population of Croatia is 4.290.612.

	Zagreb	Varaždin county	Istria	Vukovar Srijem county	Lika Senj county	Split Dalmatia county
of 25-64 yr. olds in population	56.37	54.98	57.22	53.07	51.15	54.42
vitality index (ratio of living born/dead)	98.49	75.22	88.53	84.26	47.17	106.02
No. doctors of medicine per capita	491.57	491.57	230.67	178.02	168.06	241.97
% with tertiary qualifications among 25-64 yr. olds (2001)	28.54	11.29	16.57	9.26	10.32	17.92
% in pre-school education	85.82	55.07	71.82	31.8	44.7	55.35
enrolled students as % of 20-24 yr. olds	61.51	37.06	41.3	32.58	44.36	46.36
graduates as % of 20-24 yr. olds	12.72	6.62	7.29	5.62	6.4	9.58

TABLE 2 **Select indicators for 6 counties in Croatia**
National Competitiveness Council, data for 2009 if not otherwise specified

Segmentation of respondents according to region captures a complex cluster of socio-economic as well as cultural criteria. Following the Act on Regional Development from 2009 (Official Gazette No. 153/2009) the government of Croatia undertook an analysis and grouping of counties and local governments into developmental categories. In 2010 a government decree was released that categorized counties and local government units into groups of ≤50% development, 50–75%, 75–100% and >125%. Of the 35 local governments classified as ≤50% 22 are in the eastern part of the country (Slavonia) while the rest are in Lika, Banovina and parts of Dalmatia. In contrast to that, of the 20 most developed local governments in the country (>125%) Zagreb represents one, while the rest are in Istria and Northern Adriatic [14] (Croatia Government Decree, July 2010). In terms of dispersion of regional GDP per capita [15], Croatia stands at 32.8%, compared to worse performance of Bulgaria (46.7%) or Estonia (43.8%) but also compared to substantially better performance of Scandinavian states where percentages hover at around 18%. We expect these identified regional differences in development to be reflected in attitudes and opinions of survey respondents.

It is somewhat more difficult to capture the differences in regional development when the level of counties is considered, since in Croatia counties are administrative units designed across traditional regional borders. Nevertheless, differences still emerge. TABLE 2 above shows select indicators for counties pertaining to demographic and socioeconomic characteristics of Croatia's population (Regional Competitiveness Report 2010). It shows only 6 of the 21 counties, which are selected to approximate the six regions used in the ISSP survey (Zagreb, North Croatia, Istria and Northern Adriatic, Slavonia, Lika and Banovina and finally Dalmatia).

Perhaps the strongest contrasts are revealed between Zagreb on the other hand and the Lika Senj County on the other: in terms of educational

14 The single notable exception is Dugopolje, a local government unit that houses a tax-free entrepreneurial zone in Dalmatia.

15 Figure expressed as percentage of the national GDP per capita in 2009. The smaller the percentage, the smaller the differences in wealth across the regions.

statistics the difference is strikingly unfavourable for the Lika Senj County. Similarly, the region's vitality index is 47.17, the lowest of all the analysed cases.

In addition to these large developmental differences, there are large regional differences in the extent of poverty in Croatia. The incidence of poverty ranges from circa 3% in the Zagreb region to 18% in the east of the country (NESTIĆ and VECCHI 2007). Even after accounting for the configuration of the Croatian territory, there is 1 to 6 differential in poverty rates between the poorest and richest regions; more than 70% of all poor individuals are concentrated in the central and eastern regions, while these account for only 43 percent of the population (ibid.).

Socio-economic and demographic characteristics go a long way in mapping diversity among Croatia's regions, but in order to more comprehensively understand sources of variance in public opinion across Croatia's regions, cultural factors should also be considered. Historically, Croatia's territory was under multiple cultural influences which contributed to important differences in the prevailing sets of norms, values and behavioural patterns in Croatia's regions. The complex combination of historical cultural heritage and the socio-economic development draws the map of diversity across Croatia's regions.

Having introduced the reasons for focusing on indicators of poverty, educational attainment and regional belonging as well as the measures used to capture them, the following section of the report presents the survey findings. The following sections reveal information about environmental concerns of Croatia's citizens, their estimates about both the causes and the solutions to environmental problems, and their assessment of the importance of different factors for the environment — including their own impact. In addition to that, the report discusses various aspects of environmentally desirable behaviour among the respondents. In the sections following that, the focus is on public opinion with respect to trade-offs between the twin objectives of economic development and environmental protection. Finally, the report concludes with an analysis of public opinion with respect of the proper role that government should play in environmental protection and ways in which environmental problems should be addressed through public policy.

Environmental concerns, assessments and behaviour of Croatia's citizens

— Arguably one of the most important social topics that have not received due attention in the domestic public debate is environmental protection and the wider topic of sustainable development. Opinions on climate change, geoengineering, renewable sources of energy, recycling of waste, influence of individual behaviour on environment, air pollution, hazards of nuclear power plants and similar issues have been explored within social sciences in developed countries in an effort to assess social awareness of environmental problems and, more importantly, to detect potential sources of positive social change towards sustainability. In Croatia, on the other hand, research on the perception of environmental problems is rare and sporadic, thereby creating a lack of systematic knowledge on opinions and reactions of people regarding environmental issues. Therefore it is instructive to investigate the attitudes of Croatian citizens and their implications on behaviour which can contribute to the development of sustainability-oriented policies.

Social awareness of environmental problems, or in other words the level of concern for the environment has generally increased on the global level. The number of international political treaties on the environment as well as the number of non-governmental organizations has increased. Croatia is in this sense no exception. Political engagement of Croatian diplomacy in last several decades has increased — at least on the formal declarative level, with over forty international treaties signed (CIFRIĆ 2005). Croatian citizens, as illustrated in FIGURE 10 (p. 24), are either unaware of this or still largely perceive Croatia's international environmental stewardship efforts as insufficient. Environmental Sustainability Index (ESI) index results (ESTY et al. 2005), developed by Yale University, reflect this in marking Croatia's cooperation in reduction of transboundary environmental impacts to date as the weakest component of its overall environmental sustainability performance. On the other hand greater social engagement on specific environmental issues can be read off the rise in number of environmental NGOs, with over seven hundred environmental NGO's on national and local level being active in Croatia[16]. Since the social context changed and social actors became more aware of environmental problems, environmental concern among citizens has also risen (CIFRIĆ 2005).

FIGURE 12 (next p.) shows respondents' estimates as to what the most and the second most important issues are for Croatia. The results show that Croatian citizens consider the economy as the most important issue in Croatia, and as the next most important issue. Comparing other issues that are listed, **concern for the environment is at the bottom of listed problems — only 2% of Croatian citizens consider it as the most important problem.** Bearing in mind the socio-economic situation in Croatia which probably shapes the economic circumstances as the most important problem, the environment, when it is contrasted with other issues like health care, poverty, and education, is not perceived as a problem at all. While for majority of citizens social infrastructure issues trump concern for the environmental protection, the overall ESI index (ESTY et al. 2005) shows environmental health, its exposure to stress, and the resulting human vulnerability to environmental stresses in Croatia

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16 List of NGO´s available at the web page of Ministry of Environmental and Nature Protection – http://www.mzoip.hr/doc/Udruge/Popis_nevladinih_udruga.pdf. Retrieved on March 15th 2012.

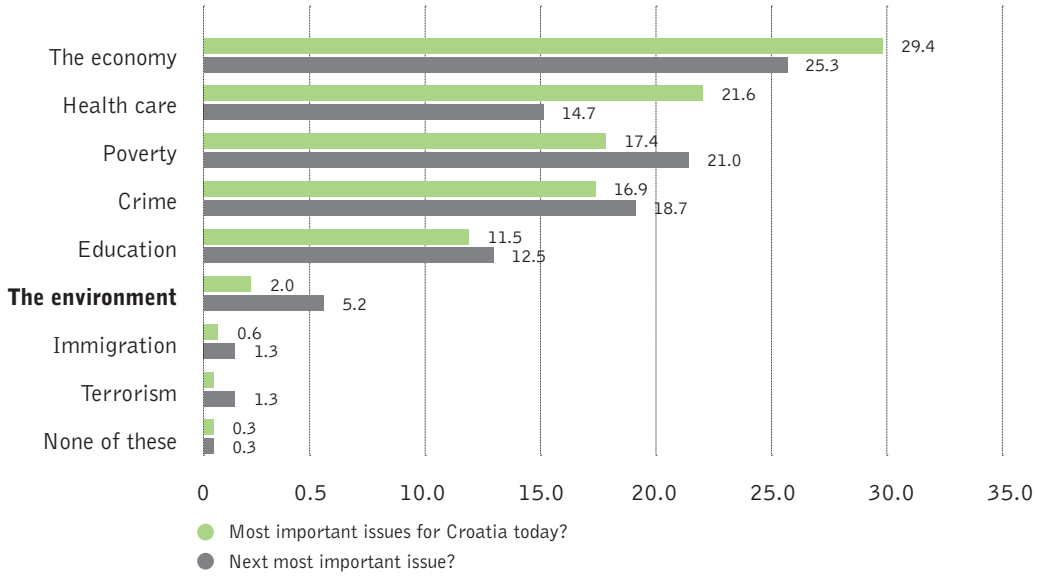

FIGURE 12 **Estimation of most important issues in Croatia today (%)**

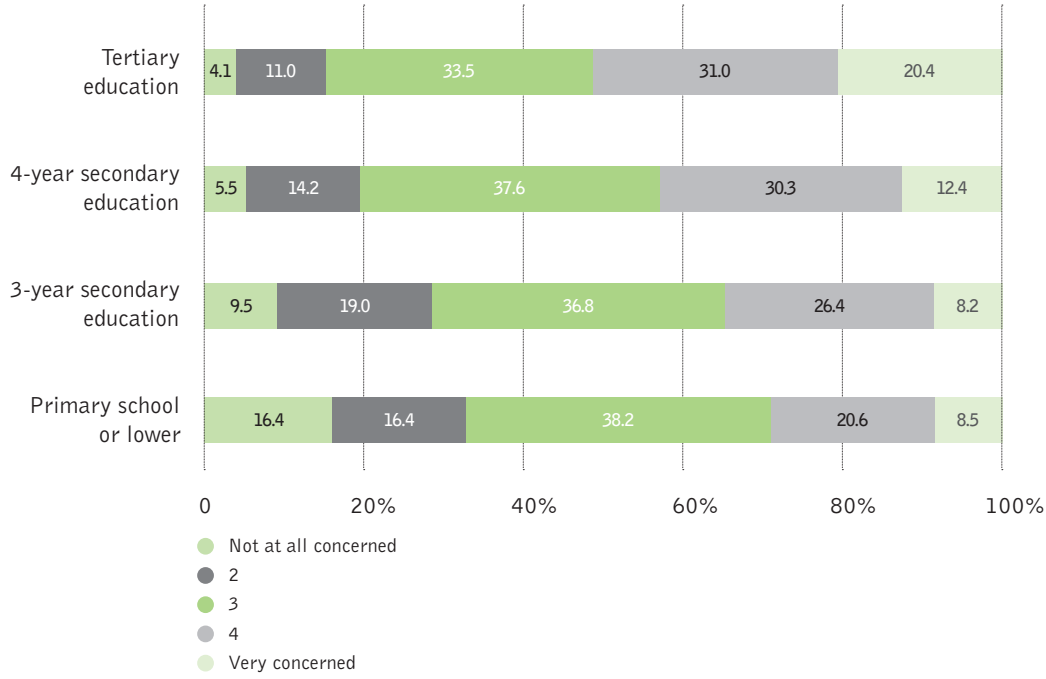

FIGURE 13 **Educational level and the concern for the environmental issues (%)**

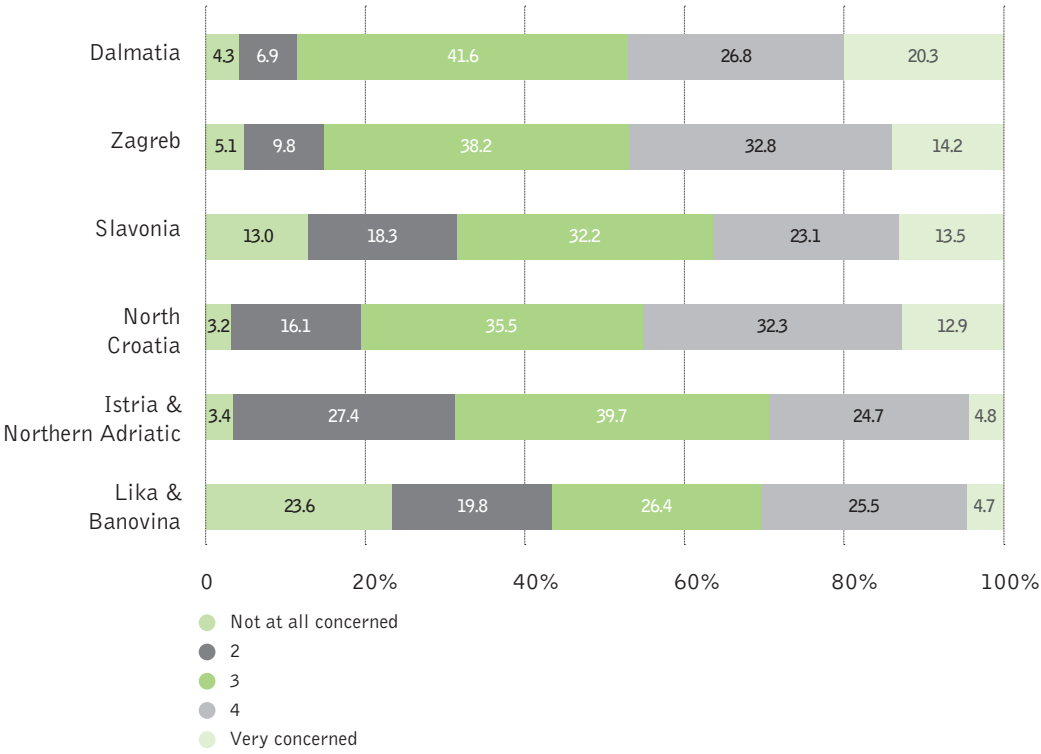

FIGURE 14 Regional differences and the concern for the environmental issues (%)

to be in a better shape than in the peer group of countries of similar level of GDP per capita. For some of those, a group of transition countries in Europe and Central Asia, a recent UNDP report (2011b) names widening social inequalities (especially between central and peripheral regions) that left significant segments of the population excluded from livelihood improvement and poverty reduction, as the issue of primary developmental concern. In light of that, and as illustrated in previous sections, Croatia's population is left with little scope for concern with environmental limits, despite notable lagging in ESI performance on biodiversity, pristine land availability and access to improved drinking water even when compared to the group of transition countries (ESTY et al. 2005).

When asked how concerned they are about environmental issues on the scale from 1 (not at all concerned), to 5 (very concerned), the distribution of respondents' answers is skewed more towards the highest concern, with only 7,4% of respondents not concerned at all about environmental issues. Majority of respondents evaluate their concern in the middle of the scale. Having in mind the results presented in FIGURE 12 which showed that respondents were more concerned with issues like economy, health care and poverty, it is possible to say that the concern for the environment for Croatian citizens is not significantly present. Further statistical analysis was done with the aim to explore the socio-demographic and socio-economic differences and it shows that differences for geographic regions and educational levels are statistically significant. Results are presented in FIGURES 13 and 14 above.

Concern with the environmental issues differs with the different level of education. Simply put, people with higher educational attainment are

more concerned about environmental issues. On average 13% of citizens in Croatia are very concerned, while within the group with tertiary qualification 20.4% show high concern. A similar disparity can be observed among those who are not concerned about environmental issues. On average 7.4% of all respondents are not concerned at all, while among those with lowest level of educational attainment or no formal education 16.4% do not share a concern for those issues.

If the concern about some issue means bigger possibility of being aware and therefore increasing the chances of a certain action, we can say that **higher educational attainment can contribute to better understanding of environmental problems and can help enable the needed value change for the switch to sustainability.**

FIGURE 14 (p. 33) clearly reveals that concern for environmental issues differs across Croatia's regions. Only in Dalmatia more people than the national average are very concerned (20,3%), while in Istria and Northern Adriatic as well as Lika and Banovina the percentages of people who are very concerned are below the national average. The level of those who are not concerned at all is the highest in Lika and Banovina (23,6%) followed by Slavonia (13%). Bearing in mind that lack of further evidence to shed light on these regional differences, one can assume that the regions with the highest level of concern for environmental issues are those where threats to environmental sustainability are more visible. Lika, for example, is a region with low level of industrial economy, predominantly rural settlements, widespread small scale agriculture, low population density and large segments of intact "wilderness". In that light it is not surprising that the level of those who are not concerned at all with environmental issues is the highest in this region.

Assessment of environmental threats

In the ISSP survey, respondents were asked to estimate which of the environmental problems shown in FIGURE 15 (next page) are most important for Croatia and which affect themselves and their families the most.

To a greater extent people estimate water, air pollution and using up natural resources as the most important problems at the national level. The perception of the least important problems at this level is directed towards genetically modified foods, nuclear waste and water shortage.

However, the perception of the problems on individual level, shown by gray lines in FIGURE 15, is somewhat different. Water and air pollution are also seen as the most important problems but instead of the problem of using up our natural resources, the problem of genetically modified foods takes place among the most important environmental problems. Differences between the percentage of answers on national and individual level is the highest precisely with these two answers. In light of attitudes to resource and sustainability governance to be presented in the final part of the report, this again shows an overall low level of individual engagement by Croatian citizens. The issue of resource depletion is perceived as a problem for the state as a whole, but does not rank high as a problem for individuals and families despite those very resources being the common base upon which their individual wellbeing ultimately depends. Genetically modified foods on the other hand, whilst highly dependent on the state for regulation are perceived as having a more immediate impact on health and wellbeing of individuals and their families. The lowest percent of people assess nuclear waste and water shortage as the most important problems for themselves and their families.

One of the rare surveys conducted in Croatia in which people were asked to assess their concern about environmental problems was conducted in 2004 on a representative sample of 1202 respondents (CIFRIĆ, 2005). Analysis showed that two factors were extracted. The first one was termed "classical ecological problems" (pollution of rivers, lakes and seas; pollution of drinking water; depletion of natural resources like forests, gas, oil and water; danger

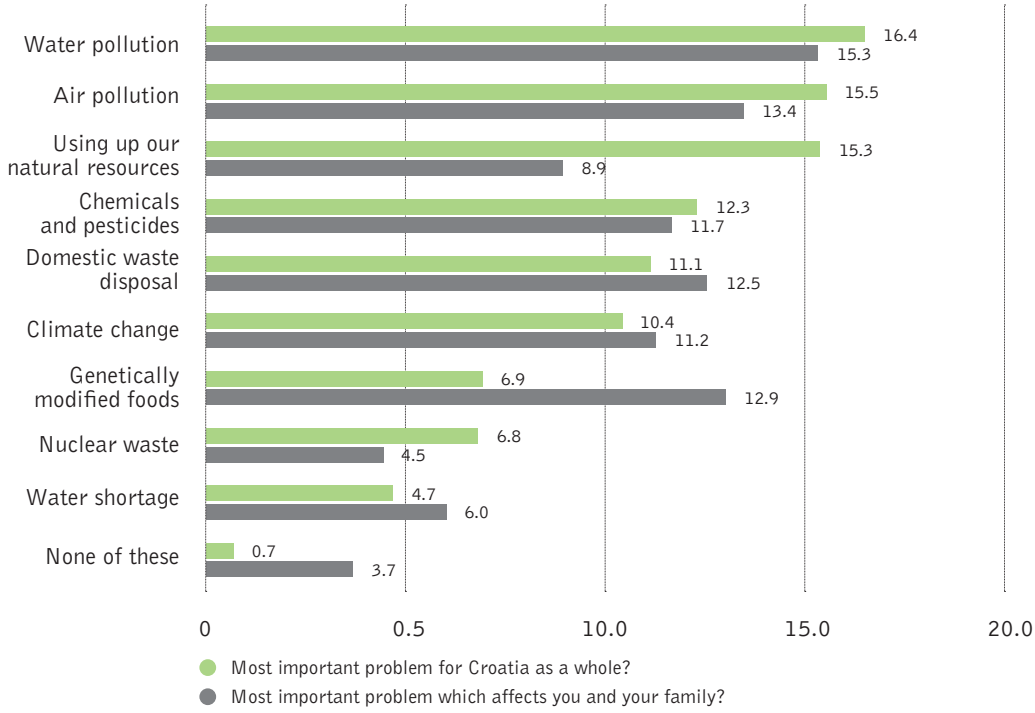

FIGURE 15 **Estimation of most important problems for national and individual / family level**

to the environment and human health caused by industrial and other facilities; accumulation of hazardous waste; air pollution, reduction of arable land because of leaching of soil, construction of houses, industrial plants, roads and similar) while the other was termed "new ecological problems" (climate change; food contamination; forests decline; improper waste disposal). Younger respondents, respondents with lower level of educational attainment and respondents of lower socio-economic status were more concerned with the so called classical ecological problems. In general the highest concern among all respondents was about improper waste disposal, accumulation of hazardous waste, food contamination, and danger to the environment and human health caused by industrial and other facilities. Problems listed as the least worrying problems for respondents were pollution of rivers, lakes and seas; pollution of drinking water and forests decline. Although the issues queried in our survey are not the same as in the CIFRIĆ survey a tentative pattern emerges. On a national level higher concern is expressed for "classical ecological problems" like water and air pollution. On the individual level, on the other hand, different issues rise in status since food issues such as genetically modified organisms become the most important issue after air and water pollution.

Assessment of causes and solutions to environmental problems

Considering previously listed environmental problems, respondents were asked to assess their knowledge about the causes and the solutions to those problems on a scale from 1 to 5 where 1 means knowing nothing at all, while 5 means knowing a great deal. Initially the distribution of answers on both questions looks similar since the majority of people estimate their knowledge with the mean score (over 40%). However, there is a statistically significant difference between respondents' estimation of knowledge about

	Causes of sorts of environmental problems	Solutions to sorts of environmental problems
REGION	**MEAN VALUES**	
Zagreb	3.40	3.15
Northern Croatia	3.20	2.60
Slavonia	3.07	2.71
Lika and Banovina	3.05	2.95
Istra and Northern Adriatic	3.10	2.86
Dalmatia	3.14	2.93
EDUCATIONAL LEVEL		
primary school or less	2.88	2.54
three year secondary education	2.95	2.63
four year secondary education	3.24	2.94
tertiary education	3.50	3.21

TABLE 3 **Country regions and educational level — causes and solution to sorts of environmental problems (mean values)**

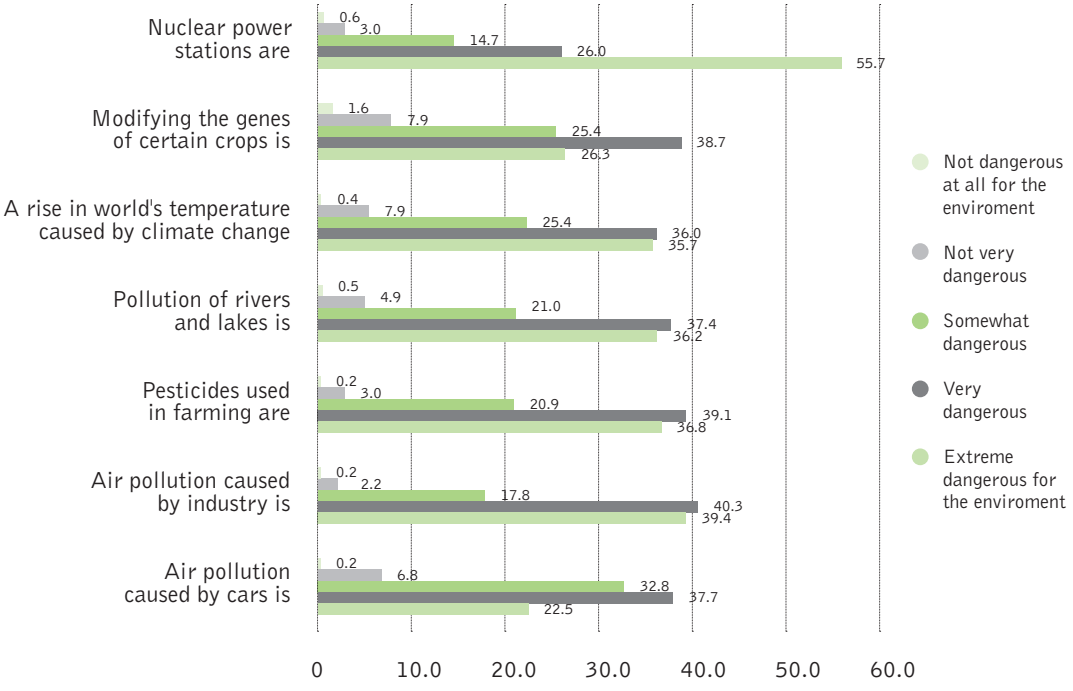

FIGURE 16 **Estimation of various factors which present a danger for the environment (%)**

causes and estimation of knowledge about solutions to sorts of environmental problems. In other words, respondents evaluate their knowledge on the causes of environmental problems higher than their knowledge about solutions to the same problems.

Further analysis confirms a statistically significant difference for regions as well for attained educational level on both questions. TABLE 3 (left) shows the average values of respondents' answers, grouped by regions and by level of educational attainment.

Respondents' estimates about causes to environmental problems are the highest in Zagreb and Northern Croatia, and the lowest in Slavonia and Lika and Banovina. Respondents from Zagreb estimate their knowledge on the solutions to these problems better than in other regions, while respondents in Northern Croatia estimate their knowledge at a lower level than respondents from other regions. As was shown in TABLE 2 (p. 29) Zagreb has by far the greatest proportion of population with tertiary education, which could explain differences in estimation of causes and solutions of environmental problems from other regions.

Considering differences between levels of educational attainment the findings in TABLE 3 clearly indicate that respondents with greater educational attainment estimate their knowledge on both answers as more substantial. **This would seem to suggest that an educated population is an important precondition for broad public understanding and participation in the political reorientation to sustainability.** Looking back to FIGURE 4 (p. 17) where Croatia exhibits a lag in expected years of schooling behind others in the group of very highly developed countries (by 2011 HDI), this would again indicate a structural weakness in potential of Croatia's society to jointly address the required switch to a more sustainable development model.

Further on, respondents were asked to estimate the intensity of danger of various factors which influence the environment, and the results are displayed in FIGURE 16 below.

FIGURE 16 (p. 36) shows that the biggest majority of respondents recognize all of the listed threats as dangerous elements for the environment; less than 10% of respondents estimate any of the given threats as not very dangerous or not dangerous at all. However, not all of the elements are estimated as dangerous to the same extent. Over 70% of the respondents think that nuclear power stations, rise in world's temperature caused by climate change, pollution of rivers and lakes, pesticides used in farming and air pollution caused by industry are very or extremely dangerous for the environment. For air pollution caused by cars and modifying genes of certain crops that is the case with 60% and 64% of respondents. Over half of respondents (55%) think that nuclear power stations are extremely dangerous for the environment. This could be related to the fact that nuclear disaster in Fukushima (Japan) occurred just before the ISSP survey was conducted in Croatia in 2011. Since nuclear waste was not perceived as one of most important threats in Croatia, either on national level or individual/family level (see FIGURE 15 on p. 35), this particular estimation may have been influenced by the dominant media coverage at the time of the implementation of the survey.

In terms of calls for a global switch to sustainability accompanying the preparations for Rio+20 conference it is encouraging that large proportion of Croatian population recognises limits of environmental sustainability reached by pollution and climate change, as well as interventions into biosphere such as gene modification. Even if affected by the Fukushima disaster, the perception of environmental dangers inherent in nuclear power generation is also a good base for opening a public discussion of sustainable development. On the other hand, a wide dispersion of estimation of various dangers is an indicator of need for broader public awareness raising and debate on issues such as transport energy base (pollution caused by cars), different effects of climate change (temperature rise vs. other effects), food security (pesticides and GMOs) and the like.

Further analysis[17] has shown that statistically significant differences for some of the factors occur among regions and educational levels. Considering regional differences, the region of Lika and Banovina shows interesting results. People in this region are less concerned with air pollution caused by industry and cars than people from other regions. This might be expected from the relatively low presence and strong decline over last two decades of the industrial economy in this region, whilst predominantly rural settlements experience less urban pollution (from transport for example) than large cities. In Zagreb, Slavonia and Dalmatia people estimate the rise in world´s temperature caused by climate change as more dangerous than do people from Northern Croatia. In this region people are also less concerned with the influence of modification of the genes of certain crops on environment.

Differences among respondents with respect to attained level of education are significant between respondents with tertiary education and respondents with three year secondary education in that those with higher educational level assess pesticides used in farming and influence of climate change on the rise of world's temperature as more threatening for the environment. As might have been expected, when it comes to more scientifically complex, global and long terms issues people with higher educational attainment show a greater familiarity and concern. This is also in line with their self-evaluation of causes of environmental problems (see TABLE 3, p. 36).

FIGURE 17 (right) shows a number of statements about individual behaviour that can have consequences for the environment. The respondents were asked to evaluate their personal influence on the environment and to what extent the environment as a topic is important or overrated.

As can be seen from FIGURE 17, over 45% of respondents disagree and strongly disagree with a statement that it is hard to know whether the way they live their lives is helpful or harmful to the environment and that there is no point of doing anything for the environment unless other do the same. The situation is very similar with the statement that "it is just too difficult for someone like me to do much about the environment" and that "many of the claims about environmental treats are exaggerated". The majority of respondents think that it is possible for one to know if her way of living influences the environment, that there is meaning in individual action for the environment regardless of others, that it is not difficult for her to do much about the environment, and that many claims about environmental threats are not exaggerated. In other words, it seems that **majority of respondents are showing a certain environmental awareness in the sense of importance of individual action which can influence the environment. This would make the Croatian population, at least notionally and before specific trade-offs are introduced, relatively well prepared to respond to policies respecting environmental limits within sustainable development.**

The situation differs when the respondents are asked if they do what is right for the environment even when it costs them more money or takes them more time. Only 30.8% of them agrees and strongly agrees with this claim while the number of those who are uncertain increases. 33.1% of respondents are aware that environmental problems have a direct effect on their daily life while 36.7% neither agree nor disagree with this claim. **Although it seems that awareness of individuals' potential to contribute to respect for environmental limits exists, the majority of people (42%) think that there are more important things to be done right now.** This is in accordance with the results presented in FIGURE 12 (p. 32), but is also greater than the proportion of those who are affected by environmental problems in their everyday life (33.1%).

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17 Multivariate analysis of variance was conducted. Results can be presented upon request.

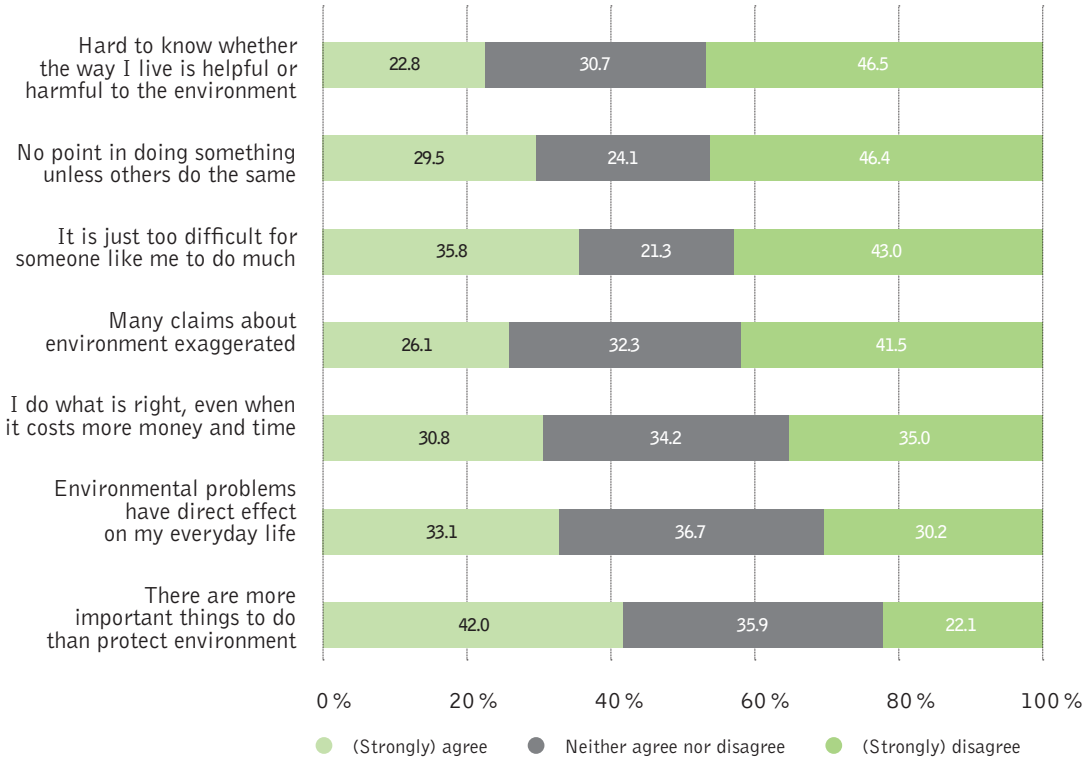

FIGURE 17 Estimation of various factors which present a danger for the environment (%)

It seems that people, although aware of the importance of personal impact and action on the environment, are less prepared to do something about it right now. Majority of people (over 40%) do not accept the attitude that one person cannot make a difference, but when personal action is estimated the level of pro-environment behaviour is less evident. One of the possible reasons may be in the fact that respondents do not perceive environment as one of most important things in their life and Croatian society. It could be said that the dominant worldview on the environment in Croatian society is "protecting the environment is important, but not for me just now". This would indicate the need for political leadership to intensify communication with the broader public of the urgency and potential for switch to a different developmental paradigm, one that would respect the environmental limits as well as the social and individual benefits to be derived from sustainable development. Croatia, just as other countries, needs to understand that broad public participation in decision-making is a safeguard of sustainability of developmental strategies. **Whilst the population is largely aware of their impact on the environment they are still waiting to reap the benefits of development extracted from the depletion of environmental common goods over the last 20 years.**

The next survey item analyses how respondents asses their personal behaviour which might have an environmental impact. FIGURE 18 (next page) shows the frequency of actions directed towards environmental protection. People were asked how often do they make a special effort to recycle, buy organic food, cut back on driving a car, reduce energy or fuel consumption at home, save or re-use water, and avoid buying certain products for the sake of the environment.

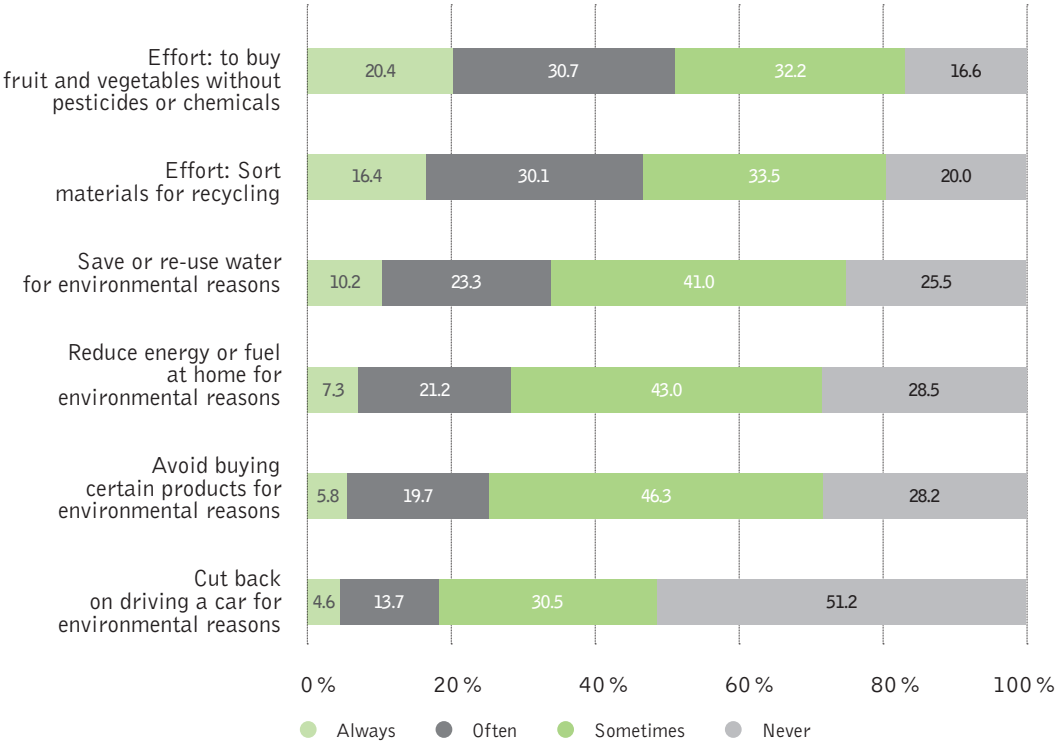

FIGURE 18 **Assessment of personal behaviour which has effects on the environment (%)**

With the exception of cutting back on driving a car for environmental reasons, for all other claims over 70% of respondents make an effort to some extent for the purpose of environmental protection. The greatest effort is made in buying fruit and vegetables without pesticides or chemicals: over 50% of respondents always or often make an effort to do this. A similar picture emerges with sorting glass, tins, plastic or newspapers for recycling. The least effort is done with cutting back on driving: 51.2% of respondents never do that. It is also indicative that most respondents make these efforts sometime, rather than often or always. This is especially evident with saving or re-using water, reducing energy or fuel consumption at home, and avoiding buying certain products, which less than 10% of respondents always do, while between 25% and 28% never do. A sharp contrast between buying pesticide-free food and driving might suggest that **where infrastructure exists (such as farmers' markets and small-scale local farms), just as is the case globally, people can make sustainability-oriented choices.** On the other hand, where infrastructure is scarce or unadjusted, such as public transport networks in Croatia or product sustainability-labelling, those choices are much harder to follow.

In behaviour that is guided by the idea of environmental protection regional and educational differences occur. It seems that in Istria and Northern Adriatic people are less willing to recycle, to buy organic food or to avoid buying certain products, to reduce the energy or fuel use at home, and to re-use water for the environmental purpose. On the other hand, respondents from Zagreb are more willing to reduce energy or fuel consumption at home, to save or re-use water, and to avoid buying certain products.

Like respondents from Zagreb, respondents from Lika and Banovina, North Croatia and Slavonia are more likely to recycle than respondents from Dalmatia. Furthermore, the effort to buy fruit and vegetables without pesticides or chemicals is more represented in Dalmatia and Zagreb than in other regions. Effort to cut back on driving is more represented among citizens living in Lika and Banovina, Northern Croatia and Zagreb than in other regions.

Though these results show a great dispersion of attitudes, knowledge and behavior some general remarks nonetheless emerge. Firstly, there is the issue of public concern for the environment in comparison with some other social and economic problems, and the level of concern in general. **General concern for environmental issues exists among people in Croatia, but it seems that it is not as intense as concern for other issues in society.**

Then there is estimation of importance of environmental issues either on national and individual level or estimation of issues which influence the environment in general. It could be argued that Croatian citizens to a lesser extent understand some "new" environmental problems, like for instance climate change. Beside that when they estimate threat of certain factors to the environment, majority of people judge them to be very dangerous or extremely dangerous. Interestingly, only in the case of nuclear power stations the majority of population classified them as extremely dangerous. If it is a consequence of the global Fukushima effect, which is likely given the timing of the survey, than one can conclude that public information campaigns have an effect on estimation of environmental threats and hazards when specific threatening events occur and information is clearly mediated. Furthermore, higher educational attainment results in greater awareness and concern for issues of environmental limits of human development.

Finally, when recording self-expressed behavior with environmental influence a dominant ecological orientation in our society expresses the importance of respecting environmental limits, but not as something important for individuals at present time. This becomes more obvious with the assessment of personal behavior since majority of people do not make a regular effort to act with environmental protection in mind. It seems that although some "pro-environment" practices exist, they are insufficient and sporadic. They require interconnecting and mutual strengthening through systemic action rather than expecting them to yield spontaneous societal change towards sustainability-oriented behavior.

Squaring the circle between economic development and environmental protection

— The Rio +20 conference in June 2012 should underpin a broader "process of redressing imbalances, a rethinking of priorities, and the necessary institutional reforms to bring about coherence in economic, environmental and social policies, which benefits all members of society" (UNESCO 2011). Developing green economies represents an important part of the effort in achieving the ultimate aim of sustainable development — human wellbeing.

The concept of green economy carries the promise of a new paradigm that enables economic growth whilst remaining friendly to the earth's ecosystems, and that can also contribute to poverty alleviation. It is compatible with the UN's concept of sustainable development, but it does entail risks for developing countries since for them developmental challenges are greater and they might interpret the green economy as another driver of inequalities (OCAMPO 2010).

While there is no unique definition of the green economy, the term emphasizes economic dimensions of sustainability and acknowledges that achieving sustainability rests almost entirely on getting the economy right (OCAMPO 2010). In addition to this, **the concept of the green economy focuses on the crucial point that economic growth and environmental protection can be complementary strategies,** "challenging the still common view that there are significant trade-offs between these two objectives" (ibid.: 2).

While the ISSP survey did not ask respondents about their opinions regarding the green economy directly, a number of question items addressed respondents' attitudes to trade-offs between economic growth and environmental protection. The respondents were asked a number of questions aimed at exploring different aspects of the relationship between these two phenomena which may give some insight into the above formulated question of the extent to which economic development and sustainability can be complementary. FIGURE 19 (right) summarizes this information, specifying the statements for which the respondents were asked to state their agreement or disagreement.

The largest group of respondents (39.2%), thinks that too much concern is devoted to the environment while our primary concern should be with prices and jobs. In the second statement the respondents were asked to decide for themselves whether they think the relationship between economic growth and environmental protection in Croatia is an either-or dilemma, or whether perhaps the two phenomena were directly related — with economic growth leading to environmental protection. A strong majority of 57.4% agreed that economic growth is the precondition for protecting the environment.

In the third statement when respondents were asked to state whether they agreed that economic growth is always damaging to the environment, they were in a way checked for congruence with the previous question: if one thought that economic development was a precondition for environmental protection, one should therefore not also contend that economic growth is always damaging to the environment. And indeed, only 19.6% of respondents had this view of economic growth as always damaging to the environment, while 43% of respondents disagreed with this statement. Somewhat worrying is the fact that a large proportion of the respondents were unable to decide their opinion on this issue — 37.3%. Since this statement should rely on some knowledge base, the large proportion

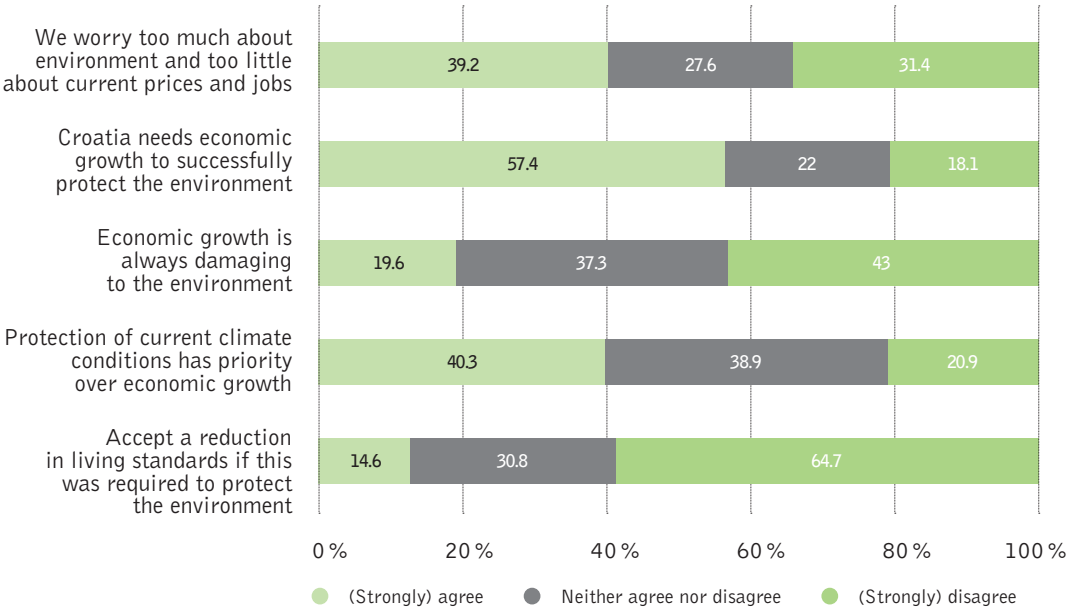

FIGURE 19 **Estimation of various factors which present a danger for the environment (%)**

of undecided respondents **may be pointing to insufficiency of information and education about the possibilities of economic development that would not be damaging to the environment.**

The statement which refers to the preservation of current climate conditions and whether that should take priority over economic development again assumes that there is a zero-sum game between environmental protection and economic development, but it asks the respondents to explicitly prioritise one against the other. When directly confronted with the need to preserve current climate conditions, 40.3% of respondents agree with this statement, another 38.9% does not take a stance on the question and finally 20.9% disagree. Like in the case of the previous statement, there is a large group of respondents that does not take a stand on this question. Overall, this is an important position prior to the Rio+20 conference, which though not a conference on climate, will combine the examination of development and global systemic environmental impacts such as climate change. Though, again, a large section of respondents is undecided (38.9%), when faced with a specific global environmental problem **only 20.9% of respondents prioritise economic growth over prevention of dangerous climate change.**

The final item in FIGURE 19 above asks the respondents to judge the extent to which they would be willing to accept a reduction in their living standards if this was required to protect the environment. While all the previous items in this section had properties of abstract trade-offs between the two phenomena of economic development and environmental protection, this question clearly puts the respondents in the position to make a personal choice. The outcome is not favourable, since **the majority of 65% of respondents are unwilling to suffer a reduction in their living standards for the benefit of the environment.** It seems that Croatia's citizens expect improvements to environmental protection to be implemented without them experiencing negative changes to their way of life. In addition to that, previous statements that posited economic development as the precondition

for sustainability may have reinforced this attitude whereby sustainable living can be achieved without major adjustments to the current way of life. Finally, the fact that over 20% of respondents did not choose either way indicates room for persuasion through public dialogue and policy action.

Overall the findings in FIGURE 19 suggest that the majority of Croatia's citizens perceive economic development and environmental protection in either-or terms, and that even though they are aware of the necessity to protect the environment, they are unwilling to accept major reductions to their way of life to achieve this goal. Most citizens are probably unaware of the average, comparatively very high, level of development and have aspirations of further material gain to improve personal wellbeing. Externalised costs of such life-improvement in terms of ecological footprint are not publicly communicated, whilst potentials for raising personal wellbeing through improvements in social structures rather than material development and gain remain beyond public perception and debate. **Raising the public profile of interconnections between development, wellbeing, and environmental potentials and limits is the starting line on the road to change how citizens of Croatia think about society, future generations and ecosystems that support us.**

Looking beyond the opinions and attitudes of the entire population, it is important to analyse whether income, educational attainment and regional belonging are related to people's perceptions regarding the relationship between economic development and environmental protection. Generally speaking, regional belonging is the strongest filter for differentiating public opinion on the said issues. This is understandable since income level and educational attainment are one-dimensional concepts, while regional belonging captures both socioeconomic and demographic characteristics on the one hand, and cultural distinctions on the other. As a result, regional belonging is a multidimensional concept that synthesizes many aspects of potential differences among Croatia's citizens. Nevertheless, it is useful for this type of policy analysis since it may help devise and implement actions targeted for the specific regions in question.

The association between the risk of poverty and the economic development / environmental protection trade off

Starting from the influence of low income and poverty, in three of the statements presented in FIGURE 19 (p.43) differences appear among the two groups — those above and below minimum wage level. As FIGURE 19 shows, respondents who are exposed to the risk of poverty more often consider concern over the environment overblown in comparison to concerns over jobs and prices, and this difference is statistically significant.

As FIGURE 20 (right) shows, while the undecided group is approximately the same size in both groups of respondents, among those whose income is below the minimum wage there is a stronger plurality of respondents who consider concerns over the environment overblown (43.3%) compared to respondents with income above the minimum wage (35.4%). This would suggest that when sustainability and economic development are formulated as a zero-sum game of either-or, lower socio-economic groups cannot be expected to give support to environmental reforms.

Similarly, as FIGURE 21 shows, it seems that risk of poverty influences respondents' inclination to judge economic growth as necessarily bad for the environment, while respondents who are comparatively better off see this as less of a danger (the difference between groups is statistically significant).

These findings may also be in part attributed to the fact that circumstances of poverty expose the worst aspects of the 20th century economic development model, such as pollution, influencing the perception according to which economic growth is always damaging to the environment. Finally, in this case again almost identical proportions in both groups are undecided about the given statement. Large proportions of

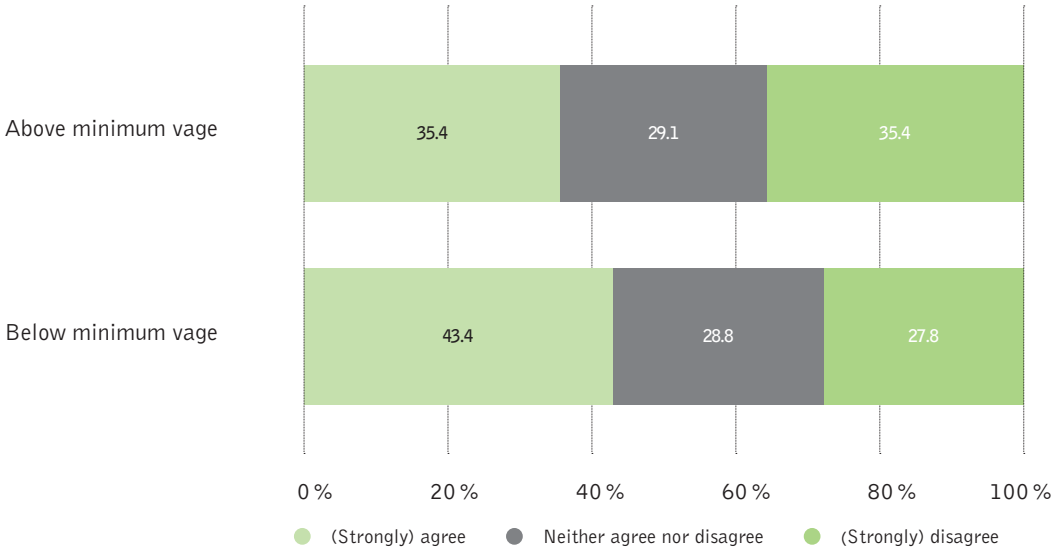

FIGURE 20 **Opinions about whether 'we worry too much about the future of the environment and too little about current prices and availability of jobs', by personal income**

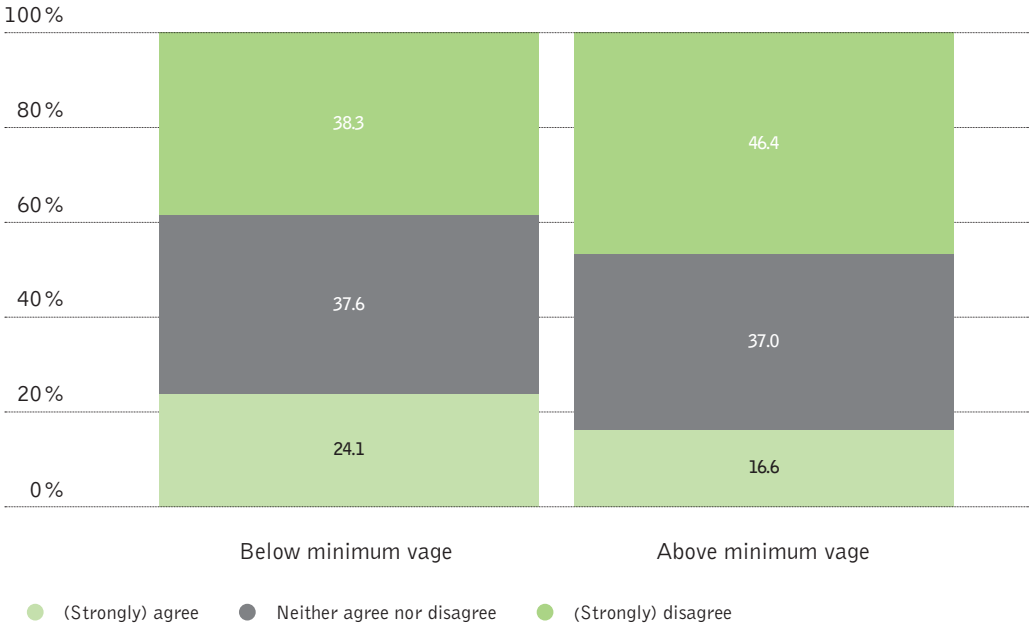

FIGURE 21 **'Economic growth is always damaging to the environment', by personal income**

undecided respondents **may indicate poor awareness or lack of education about the environmental topics.**

The third statement which reveals differences among income group is the one pertaining to willingness to accept reductions in living standards if this was required to protect the environment. As is shown in FIGURE 22 (p. 47), citizens living below minimum wage are less prepared to suffer a reduction of living standards for the betterment of the environment. This is not surprising since people exposed to poverty can hardly be expected to further reduce their standard of living. The implication here is analogous to the question of global coordination in environmental action — since significant differences in income and quality of life exist both across and within nations, not all segments of society should be expected to contribute to the same extent.

Overall however, the message of FIGURE 22 is that citizens of Croatia are in the majority not willing to accept a reduction in their living standards for the betterment of the environment. Similarly to the findings presented in FIGURE 18 (p. 40), it seems that the fact that people are aware of environmental threats and the trade-offs between economic growth and environmental protection does not easily translate into willingness to change their behaviour. In order for behavioural changes to take place, **it seems important to secure societal infrastructures on the one hand — which make environmentally friendly behaviour an easier choice, and Croatia must ensure that its weakest groups exposed to risk of poverty are not expected to shoulder the burden (in terms of wellbeing and life-chances) of switching to sustainability.**

The association between educational attainments and the economic development — environmental protection trade-off

A person's level of education is associated with different attitudes to this topic. Among those with lowest educational attainment 49.10% agree that we worry too much about the environment and too little about prices and jobs, while among those with tertiary education only 28.8% think so, and this difference is statistically significant. Similarly, educational attainment of the respondent influences her opinion of whether economic growth is always damaging to the environment. Among respondents with tertiary education the majority disagrees that economic growth is always damaging to the environment (53.9%), while in the population with primary school qualifications or lower only 35.9% of respondents disagree. Bearing in mind that answering this question should in principle be based in knowledge about environmental protection, it is also interesting to note that the proportion of respondents who could not make up their mind is smaller among those with tertiary education than among those with primary education qualifications — 32.1% and 39.7% respectively. Overall however the proportions of respondents who cannot make up their mind is rather large (between 32.1% and 40%), signalling that a significant group of respondents could not formulate an attitude on this issue, and again opening space for informational and awareness campaigns for all levels of educational attainment.

Thirdly, educational attainment is also associated with different attitudes to the necessity of reducing living standards in order to help improve the environment, with differences among groups being statistically significant. While among respondents with primary and three-year secondary education around 8–9% are willing to accept this necessity, among respondents with tertiary education 20,1% are willing to do so. Here educational attainment clearly stands at least in part for income level as well, since graduates with tertiary degrees by and large have a higher income than those with lower qualifications. Nevertheless, the overall conclusion of non-willingness to accept

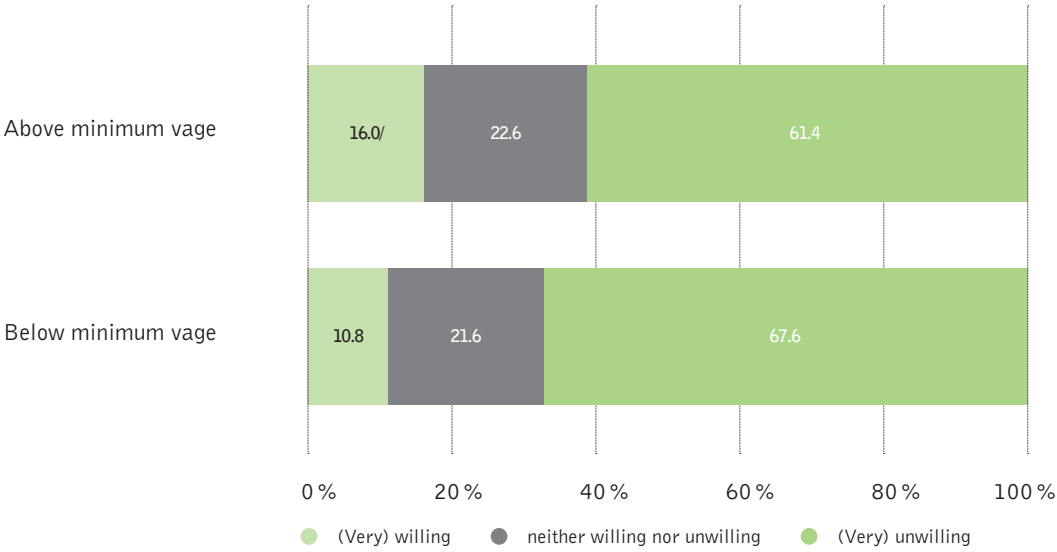

FIGURE 22 **Opinions about whether 'willing to accept a reduction in their living standards if this was required to protect the environment', by personal income**

any level of personal sacrifice remains strong across the different education groups: it ranges from 72.9% among those with primary school or less, to 54.1% among those with tertiary education. In addition to that there are around 20% of undecided respondents across the different educational groups.

Overall it may be said that **citizens with higher level of educational attainment more often perceive environmental issues as important, they less frequently see economic growth as damaging for the environment and they are more willing to accept a reduction in living standards for the benefit of the environment.** These findings suggest that education is a crucial ingredient for the reorientation towards the green economy and the green society.

The association between regional belonging and the economic development — environmental protection trade-off

As was already mentioned, segmenting respondents according to regional belonging produces the most pronounced differences since regions are a complex cluster of socio-economic and cultural factors. With respect to the question of whether we worry too much about the environment and too little about prices and jobs, there is a statistically significant difference among respondents from the six regions. As FIGURE 23 below shows, an outright majority of respondents (57.4%) from Slavonia consider concerns over the environment overblown, followed by an exact majority of 50% in Lika and Banovina and then a plurality of 42.5% in Northern Croatia. In contrast to that — in Zagreb, Dalmatia, Istria and the Northern Adriatic a plurality of respondents disagrees with this statement.

This is an interesting finding given that Slavonia, Lika and Banovina and Northern Croatia are among the most agriculturally fertile regions with largest segments of rural and semi-rural populations which are involved in food production.

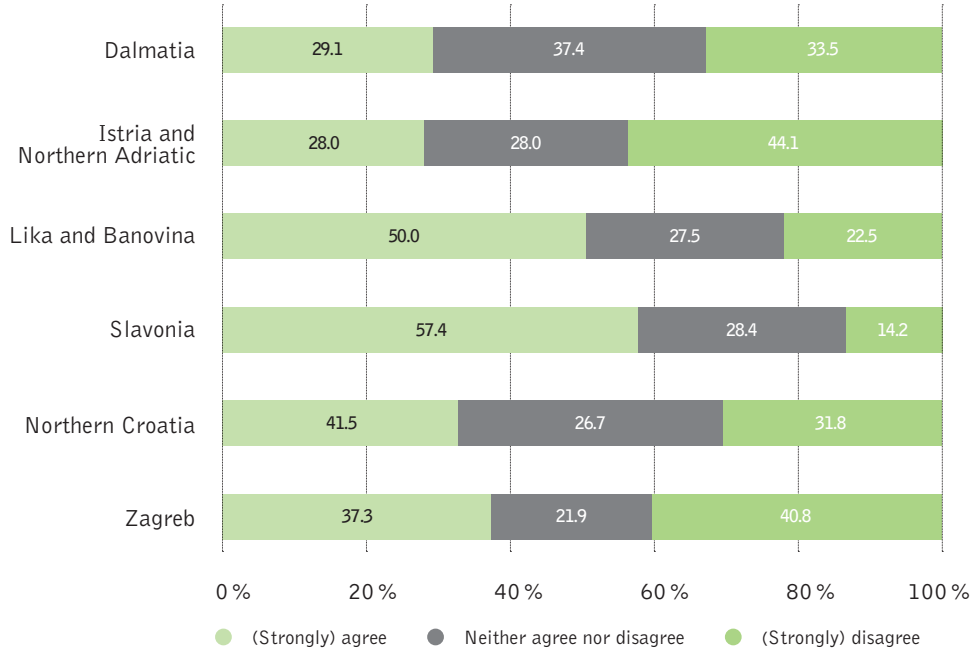

FIGURE 23 **Opinions about whether 'we worry too much about the future of the environment and too little about current prices and availability of jobs', by region**

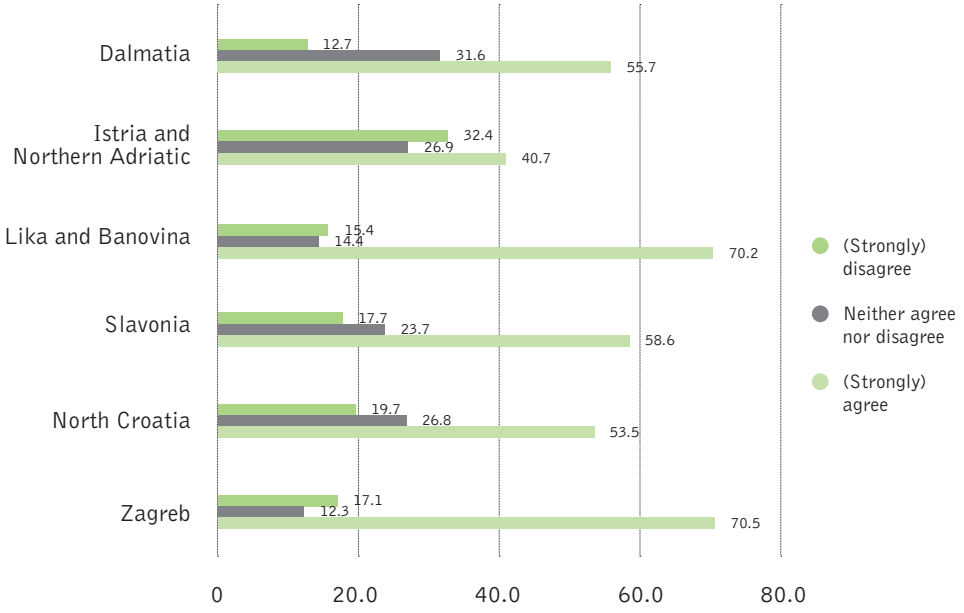

FIGURE 24 **Croatia's citizens' opinion as to whether 'economic growth is needed to successfully protect the environment', grouped by region**

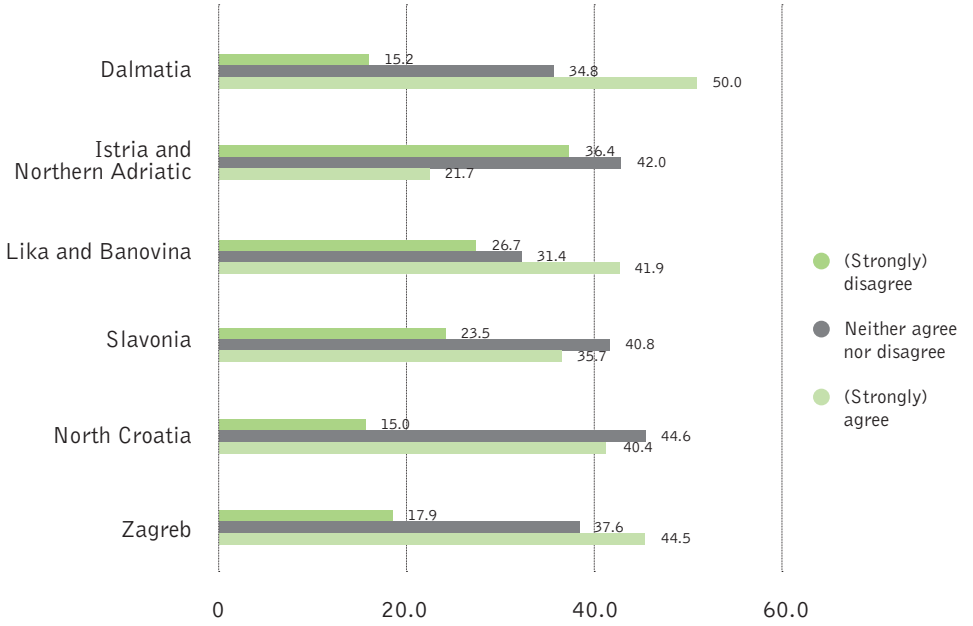

FIGURE 25 **Croatia's citizens' opinion as to whether 'preserving current climate conditions should always be a priority over economic development', by region**

These findings may either suggest that the respondents are not aware of environmental degradation in their regions, or that even if they are, they are still prepared to sacrifice environmental sustainability for the sake of growth and employment. Other findings in this study would indicate that the latter is a more likely explanation.

Similarly, important regional differences emerge with respect to whether economic growth is needed to successfully protect the environment, as shown in FIGURE 24 (left).

While across all regions the dominant public opinion supports the idea that economic growth is needed for environmental protection, FIGURE 24 shows that respondents from Zagreb and from Lika and Banovina region show the largest majorities in support of this statement, while in the coastal regions this support is markedly lower. Istria and the Northern Adriatic stand out as regions where most respondents disagree with the given statement. Since both the most well off region (Zagreb) and the least well of region (Lika and Banovina) support this view, it is difficult to draw conclusions with respect to how socio-economic circumstances may impact this opinion.

Finally, this section concludes with regional differences in attitudes towards whether preserving current climate conditions should have priority over economic development and whether we are willing to accept a reduction in living standards in order to protect the environment. With respect to the latter, regional belonging seems not to be associated with differences in attitudes. **Across the regions of Croatia respondents are similarly unwilling to accept changes to their living standards for the betterment of the environment.**

In the case of prioritizing the stopping of climate change over economic development, statistically significant differences related to geographic region appear, as shown in FIGURE 25 above.

The most pronounced difference appears among respondents from the two coastal regions. While in Dalmatia the majority of respondents agree that preserving current climate conditions should always have priority over economic development (50%), in Istria and the Northern Adriatic region only 21.7% think so. This might indicate that respondents from Dalmatia, historically an environmentally precarious region, are more exposed to presently visible (summer heat and drought) and future predicted (sea-level rise) effects of climate change. In addition to that, Istria and the Northern Adriatic is a less precarious environment due to its inland food base and its proximity of well-developed regions in Italy and Slovenia. Finally, differences in attitudes regarding these questions may also be due to different experiences of development among the coastal regions.

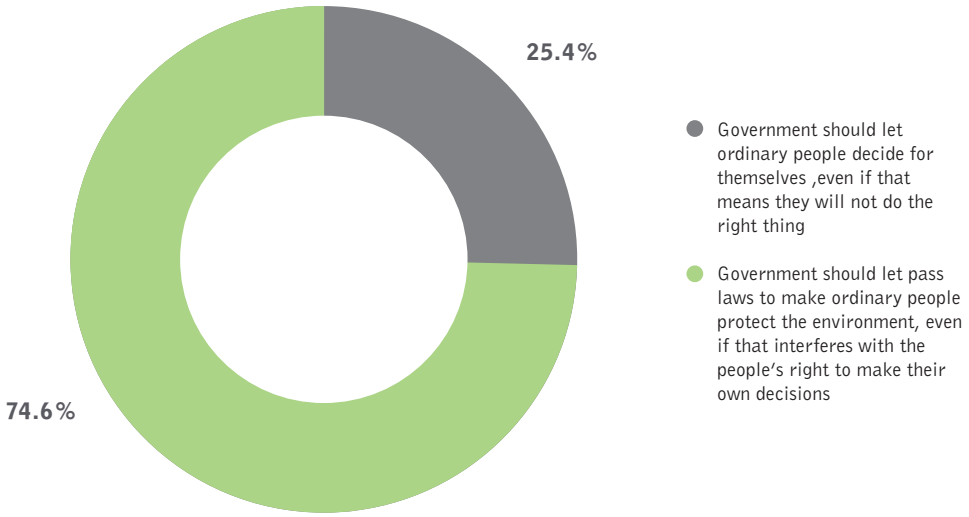

FIGURE 26 **Appropriate role for government**

Politics and the environment — sticks and carrots

— In his analysis of sociocultural value systems in Yugoslavia JOSIP ŽUPANOV developed the concept of the *egalitarian syndrome,* which stood for a cluster of values that include an emphasis on security, preference for state regulation and redistribution as well as state paternalism whereby the responsibility for societal outcomes is relegated to the state (1969). According to him, the egalitarian syndrome was the foundation for a pact between the political party bureaucracy on the one hand and the working class on the other, ensuring the stability of the regime. An empirical study from the 1990s showed that 86% of respondents in Croatia thought that the state should take more responsibility in taking care of its citizens and that state paternalism was highly present among Croatia's citizens (Štulhofer 2000). Later empirical research on ISSP data reconfirmed a still enduring presence of state paternalism among Croatia's citizens (Jokić and Dolenec 2009).

The state clearly plays a crucial role in the formulation of public policies, the commitment of public funding to sustainable development programmes and the broad political and administrative coordination and implementation of necessary actions. However, if citizens rely too much on the state and too little on their own capacity for collective action, such an effective, responsive and accountable state will not emerge. From the perspective of democratization, it is important that citizens recognize their responsibility in bringing about a reorientation towards more sustainable ways of living, as resulting from their own interests as members of a community. Therefore this section analyses citizens' opinions regarding the appropriate role that government should take in protecting the environment, their assessments of their own preparedness to modify their behaviour towards more sustainable practices and their preferences for the type of actions governments should undertake in ensuring environmental protection.

Firstly, survey respondents were asked to choose whether the government should let people themselves decide how to protect the environment, or whether the government should pass laws that oblige people to protect the environment even in cases where it interferes with their right to make their own decisions. As can be seen from the FIGURE 26 (left), a large majority of 74.6% of the respondents think that the government should create a legislative framework that would oblige citizens to protect the environment.

As was mentioned in the introduction to this section, Croatia's citizens exhibit a steadily high level of state-dependency, expecting the state to play a paternal role in society, governing desirable behaviour as well as providing for society's needs. This tendency reflects in the findings in Figure 26, where an overwhelming majority of 75% of the respondents prefers the state to legislate environmentally friendly behaviour. This attitude among respondents is very homogenous, and does not vary with education or personal income of the respondent.

However, when respondents are grouped based on the region where they come from, statistically significant differences appear, as shown in FIGURE 27 on the next page.

While the general picture across the regions is one of reliance on the state, respondents from Istria and the Northern Adriatic show the most reliance on self-government when it comes to environmental issues, while respondents from Dalmatia show the strongest reliance on the

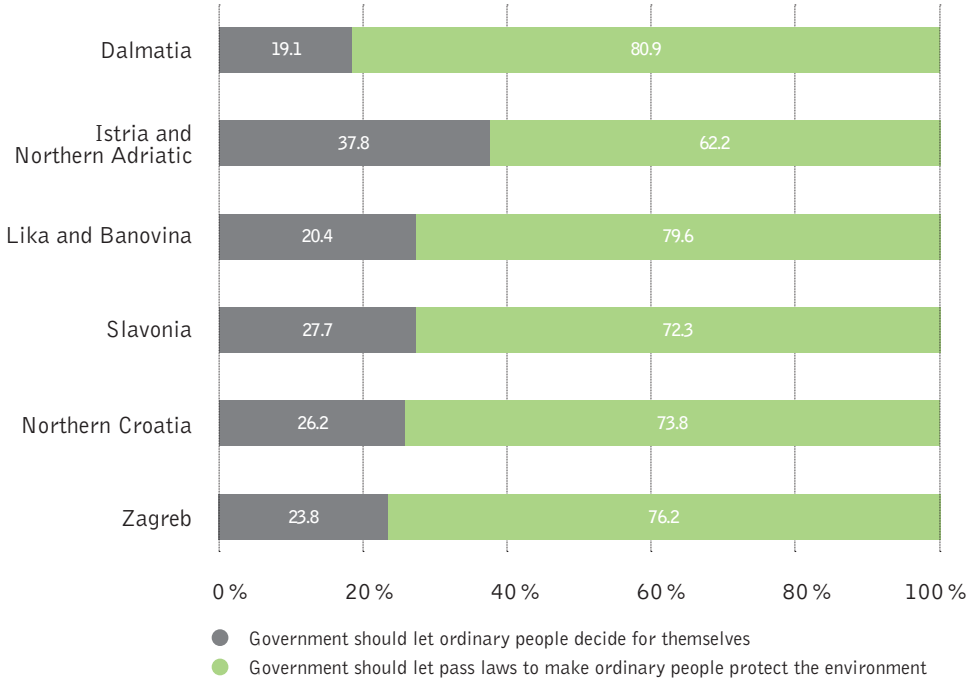

FIGURE 27 **Appropriate role for government (people), by region**

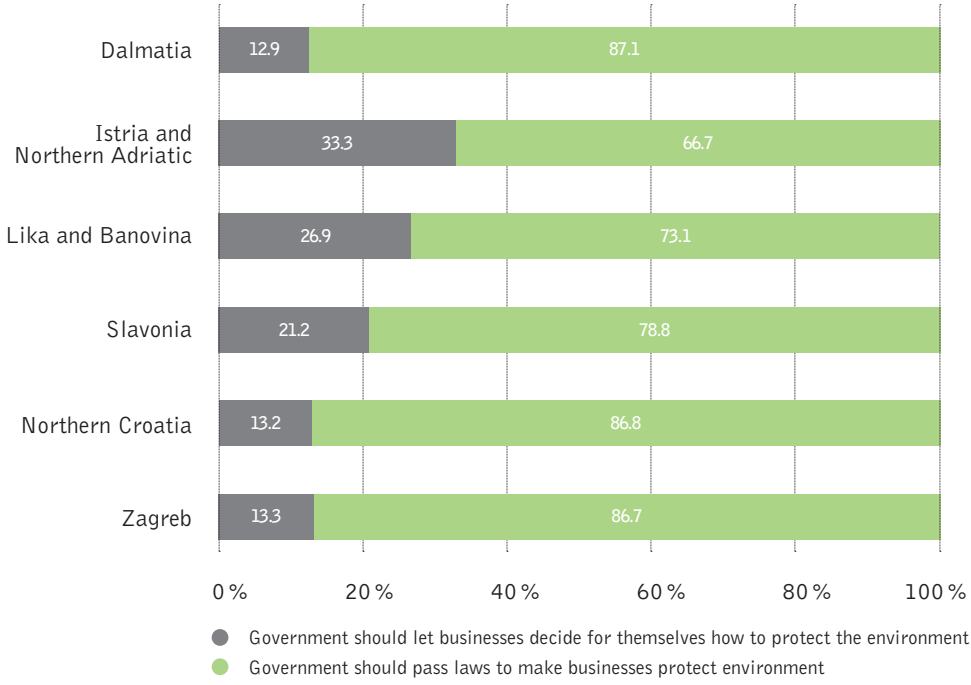

FIGURE 28 **Appropriate role for government (businesses), by region**

state to deal with this problem. In Dalmatia over 80% of respondents rely on the government to introduce coercive measures to influence changes in individual behaviour towards adopting practices for the protection of the environment. From this finding it might seem that respondents from the more well-off regions show more self-reliance compared to those coming from less developed regions, but then respondents from Zagreb should have also shown more self-reliance. Overall the differences in this attitude should not be overplayed since the dominant picture is one of homogeneity and strong reliance on the state.

When the same dilemma is framed towards the responsibility of corporations and industry, an even greater reliance on the state to manage environmental challenges emerges, reaffirming how Croatia's citizens show much more trust in the state than in private enterprises. Asked whether corporations should decide for themselves how to protect the environment or whether they should be obliged to do so by government action, 81,8% of the respondents agree that the government should take on a regulatory role. Again, this attitude does not vary with educational attainment or personal income of the respondent — only regional differences are statistically significant, shown in FIGURE 28 (left).

Regional differences identified in the previous response reappear, with Istria and the Northern Adriatic registering the biggest portion of those advocating self-government for corporations (33.3%), while respondents from Dalmatia show the highest reliance on the state (87.1%). These results mirror those on the previous question where respondents were expressing preferences regarding governing individual behaviour. Both with respect to individual behaviour and that of corporations, the overall picture is one of reliance on the state.

The respondents were also asked to judge the best approach for enticing industry and corporations into environmental protection actions. Respondents were able to choose whether they think the best approach would be to impose heavy fines on businesses that damage the environment, use the tax system as an incentive mechanism or divert energy towards informing and educating industrial subjects about the advantages of environmental protection. Once it was determined that citizens of Croatia prefer the state to govern both personal and corporate behaviour regarding environmental protection, this question aims to unveil whether they prefer more or less coercive state measures. FIGURE 29 (overleaf) reveals respondents' preferences.

Citizens of Croatia overwhelmingly prefer a system based in sanctions, revealing a conception of the state as a control and sanction authority. The majority of 62% respondents prefer sanctions in the forms of heavy fines for businesses, while only 20% prefer using the tax system to reward businesses for positive practices. A further 18% of the respondents prioritize information and education of enterprises as the best strategy for increased protection of the environment. These preferences towards types of state action towards businesses and corporations do not vary with educational attainment or personal income, again revealing a strongly homogenous preference in the population. Regional belonging again uncovers some statistically significant differences among Croatia's citizens, as shown in FIGURE 30 (overleaf).

The only region where a minority of respondents opts for fines and sanctions is Lika and Banovina (37.90%), while in all other regions this is the preferred option of the majority. The region of Istria and Northern Adriatic, which showed less state reliance in previously analysed items now shows the least fate in non-coercive measures of the state in the form of information and education campaigns for businesses — only 9.3% of respondents prefer these types of state measures. Respondents from this region also do not put much faith in tax rewards as a measure of enticing compliance, but instead an overwhelming majority of respondents prefers heavy fines and taxes (78.60%) as the most effective state measure aimed at enticing businesses and corporations to adopt environmental protection

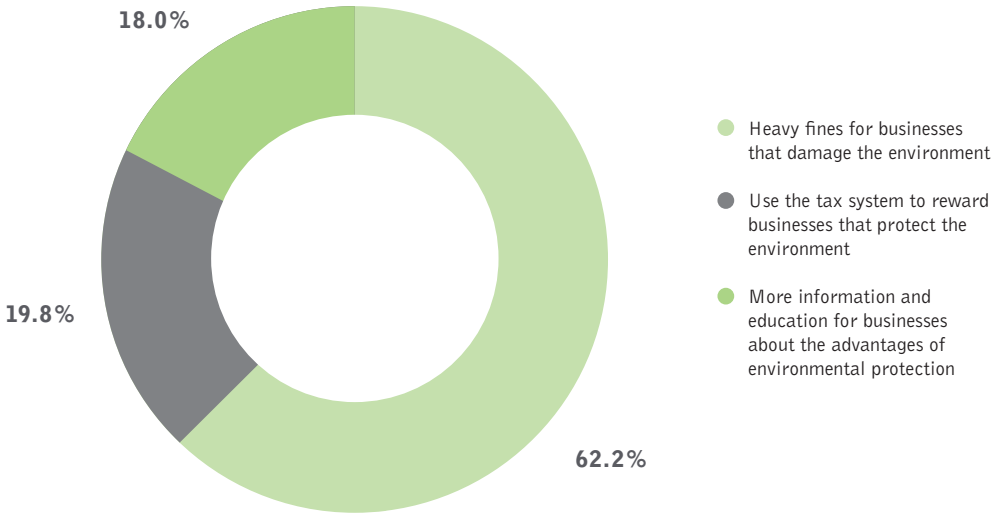

FIGURE 29 **Preferences for type of government intervention into business**

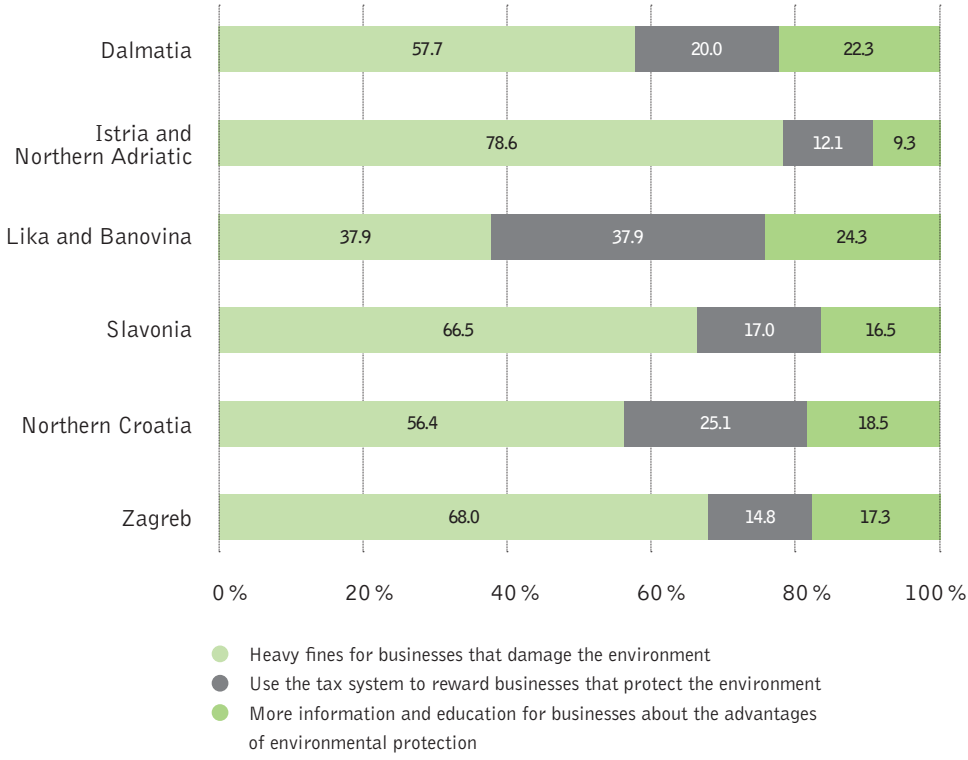

FIGURE 30 **Preferences for type of government intervention into business, by region**

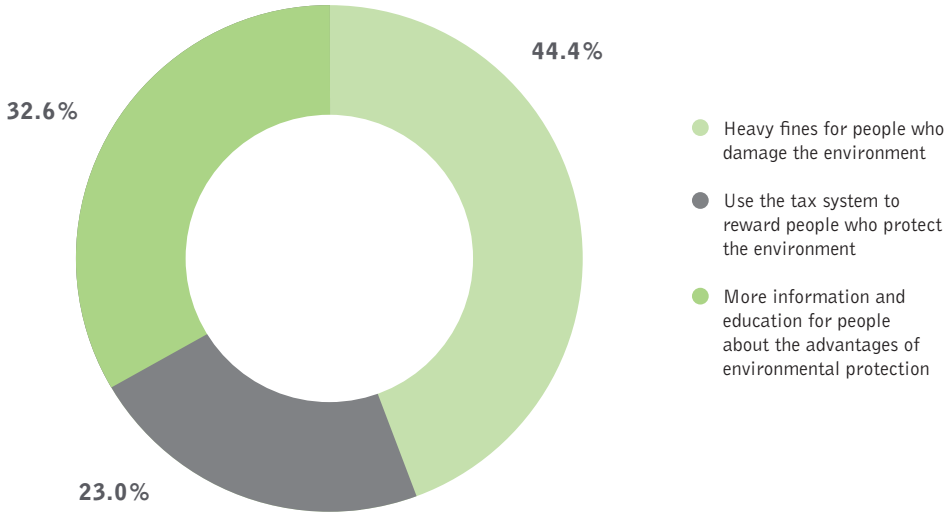

FIGURE 31 Preferences for type of government intervention into individual behaviour

measures. It is possible that recent experiences with disregard for citizens' concerns over local heavily polluting industry in this region may have prompted such a strong reaction.

When the same question about which governmental measures would be most effective in making individuals conform with environmental protection actions, the respondents show a weaker preference for legal fines as a method of inducing behaviour through sanctions than was the case when discussing corporations, as FIGURE 31 above shows.

The support for legal fines dropped from 62% to 44%, while reliance on information and education in this instance becomes the second preferred solution for introducing environmental protection actions, advocated by 33% of the respondents. Using the tax system to reward positive behaviour is only chosen as the first preference by 23% of the respondents. When these preferences are compared to those aimed at regulating business enterprises, these findings reveal distrust among Croatia's citizens when it comes to the behaviour of companies and private businesses.

Overall, this analysis of the appropriate role of government in environmental protection and the preferred instruments of intervention **reveals a strong reliance on the state, and in particular on its coercive capacity of control and sanction.** In this aspect, these findings reconfirm earlier sociological studies which stressed a strong presence of state paternalism among Croatia's citizens — they still expect the government to make the necessary steps for a reorientation towards environmental protection and more sustainable practices.

On the one hand, this is good, because it means that with the right leadership which is aware of the urgent need to change Croatia's approach to sustainable development, the citizens will not stand in the way of the changes that need to be made. On the other hand, without a strong democratic impulse in the population which demands that the state changes its current course of development, a responsible and accountable government that will lead the switch to sustainable development is not likely to emerge. While calling the state to action, it is equally important that each citizen recognizes her responsibility in fostering more sustainable ways of living (including what aspects of current development level to abandon in order to keep others) and finding collective practices that will be able to sustain our communities.

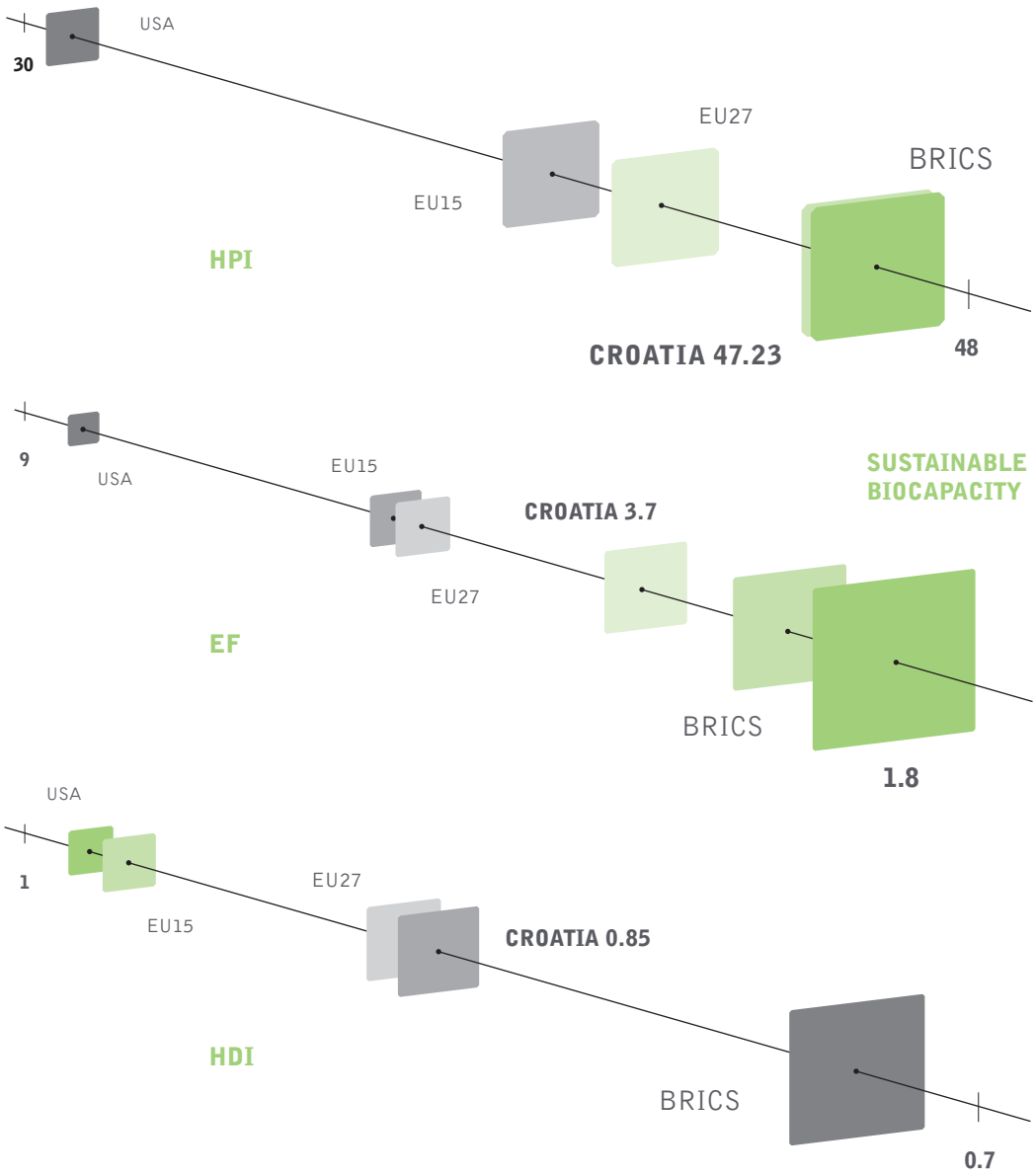

FIGURE 32 **Croatia's comparative position on HDI (bottom), EF (middle) and HPI (top) indices**

Policy Summary and Conclusions

— The need to integrate economic, social and environmental dimensions of development to achieve sustainability was clearly defined already in 1987 in the Brundtland report. 25 years later **political leaders still regard sustainable development as extraneous to their core responsibility of ensuring wellbeing for their citizens.** At the same time the world as a whole faces grave instabilities both in the economic systems that are supposed to provide further development, and in the climate and biological systems providing habitat and sustenance to everyone alive today.

Twenty years ago systemic socio-political changes globally were followed by the commitment in Rio to turn the new-found global focus onto a sustainable model of development. Whilst absolute poverty has since been reduced globally, the gap between rich and poor has widened both within and between countries. **The benefits of development over the last 20 years have not been equally distributed, while the costs transferred to the shared biocapacity have grown and continue growing.**

Croatia's overall average development measured by HDI ranks it among **the most highly materially developed societies in the world,** but this fact is generally unrecognized. Having that in mind, Croatia should not be postponing sustainable development policies for some prosperous future, but instead should **own up to its development level and focus on improving the sustainable quality of life of its citizens today.**

However, the benefits of development in Croatia over last 20 years have not been equitably distributed. In fact, **Croatia's overall development level drops by 15% when inequality is included in the index (IHDI).** Croatia is in the group of eu countries with the highest poverty rates, while its GINI coefficient of inequality has grown since the economic crisis. In other words, available data indicates that **despite its high average level of development, inequality is a serious concern for Croatia's development path.**

This overall level of development achieved comes at a cost to the environment and its potential to sustain this and future generations. Over the last 20 years Croatia's extraction of its natural capital has doubled, and has exceeded its own locally sustainable biocapacity. However, Croatia's comparative position on Ecological Footprint (EF) and Happy Planet Index (HPI) that this level of development comes with a comparatively lower impact on the environment than is the case in the most developed countries in the Western hemisphere.

As a result, **Croatia is well-positioned for a switch to a more sustainable development path at a comparatively lower social cost.** At the same time, it is important to emphasize that Croatia has overstepped its own local biocapacity over the last 10 years. **Currently, another ¾ of Croatia are required in terms of resources and regenerative capacity to maintain this average level of development.** This is a debt taken from future generations.

Croatia's ecological footprint (EF) has been continually growing, while its own biocapacity has been steadily dropping. Main contributors to the size of the footprint in Croatia are energy generation and food production activities, and these are the areas with the greatest potential for Croatia's shift towards more sustainable development. Croatia's CO_2 per capita emissions

are above sustainable limits, they have grown substantially over the last two decades, and will need to decrease in line with European and global carbon-cutting efforts.

Croatia's position on the Happy Planet Index reveals **a better balance between human wellbeing and ecosystem cost than is the case with the European countries of a similar** HDI **value.** In fact, its HPI value places it closer to the average value of the BRICS group of developing countries, whose level of development (HDI) achieved through a lower ecosystem cost is much lower than Croatia's. Therefore, Croatia has good preconditions for reorienting towards sustainable practices while maintaining higher levels of development.

The analysis of public opinion in Croatia reveals certain obstacles to broader public awareness and participation in the switch to sustainability. When it comes to prioritising environmental protection over other societal issues, **citizens of Croatia think that there are more important things to do now than worry about the environment.** When they were asked to prioritize environmental concerns among other social issues such as the economy, health care or poverty, it comes out near the bottom — **only 2% of Croatia's citizens consider the environment as the most important problem.**

Though a majority of the respondents see environmental problems as presenting dangers to themselves and the society as a whole, they are primarily concerned with the distribution of current material benefits of development and are not regularly practicing behaviour with environmental sustainability in mind. An analysis of environmentally-friendly behaviour indicates that choices regarding reducing energy use or avoiding buying certain products **depend on the broad availability of social infrastructure that makes "green choices" easily available.**

Groups of lower socioeconomic status and lower levels of education know less about environmental problems and available solutions, they are less concerned about environmental issues and they find it harder to see potential complementarities between economic growth and environmental protection. These findings stress **the importance of reducing inequalities as an integral part of a politics for sustainable development.**

Public opinion analysis indicates that more educated respondents recognize environmental concerns as more important, and they are more aware both of the problems and of the solutions to environmental threats. This would seem to suggest that a better **educated population is an important precondition for broad public understanding and participation in the political reorientation towards a green society.**

Even though the majority of respondents are aware of the necessity to protect current ecosystem services, they are **unwilling to accept major reductions to their way of life to achieve this goal.** 65% of respondents are unwilling to suffer a reduction in their living standards for the benefit of the environment. **Raising public awareness of the relationship between development, wellbeing, and environmental limits should help change how citizens of Croatia think about society, future generations and ecosystems that support us.**

Croatia's citizens strongly rely on the state when it comes to the switch to sustainability. They express a **strong preference for the state to legislate rules of sustainable development, and they see the state primarily through its coercive capacity of sanction and control.** While the role of the state as the central instance that coordinates many policies needed for a re-orientation towards sustainability is not in question, these findings suggest there is need to strengthen democratic impulses for voice, collective action and self-governance in the population. **Without a strong democratic impulse in the population which demands that the state changes the current course of development, a responsible and accountable government that will lead the switch to sustainable development is not likely to emerge.** Finally, it is equally important that each citizen recognizes

her responsibility in fostering more sustainable ways of living and finding collective practices that will be able to sustain our communities in the coming future.

Croatia is currently in a good position to change from the development path that puts excessive pressure on the environment whilst deepening social inequalities to a sustainable development model that respects citizens' aspirations, ecosystems' limits, common resources and future generations on a shared planet.

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EF	Ecological Footprint
GMO	Genetically modified organisms
HDI	Human Development Index
HPI	Happy Planet Index
IEA	International Energy Agency
ISSP	International Social Survey Programme
NEF	New Economics Foundation
SD	Sustainable Development
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Conference on Sustainable Development
UNDP	United Nations Development Programme
UNESCO	United National Educational, Scientific and Cultural Organization
UNSGHPGS	United Nations' Secretary General's High-level Panel on Global Sustainability
WCED	World Commission on Environment and Development
WWF	World Wide Fund for Nature

Today, 20 years after the first Earth Summit, many of the agreements and declarations made in Rio have not been realized regarding such fundamental issues as combating poverty and protecting the overallglobal environmental stability (including some poignant local failures). Whilst absolute poverty has since been reduced globally, the gap between rich and poor has widened both within and between countries. The benefits of development over the last 20 years have not been equally distributed, while the costs transferred to the shared biocapacity have grown and continue growing. The promises of steering the planet into a safer 21st century remain unfulfilled.

For us and our partners, Rio 2012 is a call to action and new window of opportunity to design and co-create future based on political debates that bring solutions and alternatives to the destructive model of economic growth as we have known it for the past 200 years.

This analysis suggests that Croatia is currently in a good position to change from the development path that puts excessive pressure on the environment whilst deepening social inequalities to a sustainable development model that respects citizens' aspirations, ecosystems' limits, common resources and future generations on a shared planet. **Croatian version of the analysis is available at www.boell.hr**

Heinrich Böll Stiftung
Green political foundation

Preobraženska 2/III, 10000 Zagreb
T 00 385 1 4812 530 **E** hr-info@hr.boell.org **W** ww.boell.hr

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