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The Environmental Policy Center

Sustainability Outlook 2030: Environmental Futures for Israel

*A joint project of the Environmental Policy Center
of the Jerusalem Institute for Israel Studies
and the Ministry for Environmental Protection*

Edited by: Valerie Brachya

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Introduction

Sustainability Outlook 2030 arose from a perceived need that public policies should be pointing the way to the future. While the future is full of uncertainties and frequently out of our control, we need a clear vision of where we are going, what we are trying to achieve, what obstacles may lay in our path, how to cope with risks and how to recognize and use opportunities.

The Environmental Policy Center of the Jerusalem Institute for Israel Studies, as an external 'think tank', together with the Ministry of Environmental Protection, as the official Government Ministry responsible for leading the Sustainability agenda, jointly created a challenging and innovative project to define possible, but realistic, environmental futures for Israel. The project harnesses insights from international experience together with forward-thinking of leading experts in Israel, to provide a practical set of policy packages. The Sustainability Outlook will hopefully be adopted by the government in mid 2012 and accepted by decision shapers and makers in the private sector and civil society as a long term framework for cooperation and building consensus and will become the first stage of a continual process of revision over the following years.

The Need for Long-Term Policy

Sustainability Outlook 2030 was initiated in 2010 as a joint project by the Ministry of Environmental Protection and the Jerusalem Institute's Centre for Environmental Policy to draft Israel's first long-term policy framework for environmental governance. It is designed for policy makers, primarily in government but will be relevant to decision makers and leaders of public opinion and organizations which influence them. It is hoped that what starts out as a document will turn into an ongoing process, to be reviewed and revised on a regular basis. "2030," as we call it, will reflect conceptual thinking and environmental responsibilities at the international level but will specifically relate to those issues most relevant to Israel's own interests.

The rationale of 2030

Policy makers should be aware of what is likely to happen, recognize the paths they want to take and those which they do not want to take, in order that they may create and harness opportunities as they arise and minimize risks and vulnerabilities before they occur. This is considerably different from the common situation where policy making is an urgent response to unanticipated changes or the sudden need to cope with a crisis.

Long-term thinking presents a challenge to policy makers. According to the European Environment Agency (BLOSSOM project, 2008), policy makers often wait too long for evidence to justify action (climate change and the effects of hazardous substances are cases in point). Furthermore, they tend to act too quickly on new opportunities without due attention to spillover effects (over-enthusiasm concerning biofuels, for example). Government is often fragmented, lacking coherency as a "whole" entity. The result is that policy makers often approach the future on the basis of experiences in the past, which may serve the short term but are not necessarily appropriate in relation to long-term goals.

Agenda setting by government often reflects a tension between policy making and the need to demonstrate implementation and the delivery of results. When emphasis is placed on exhibiting demonstrable results to the public, particularly strong where elections are held frequently, financial and manpower resources will be channelled to implementation, such as inspection and enforcement. Aware that the role of the regulator is to establish policy, the UK, for example, separated the functions of policy making concerning the environment from implementation by establishing a government implementing agency, which took over the functions of delivering efficient services to the public. Although the issue of policy making versus policy implementation has been discussed by the Prime Minister's Office in Israel in relation to government as a whole, the current situation requires the Ministries to carry out both policy setting and implementation, which automatically tends to give preference to implementation and consequently less attention to policy making.

Agenda setting in government is usually determined by a dual process, whereby items are proposed by the senior permanent staff of a Ministry, of high professional competence and familiar with the relevant issues in a global and national context, and by Ministers and their appointed Director Generals, who bring with them particular public and political concerns to which they wish to pay attention during their term of office. The result is often a fragmented and changing agenda from year to year, lacking in continuity and coherence.

The following table of goal setting by the Ministry of Environmental Protection over the last decade illustrates how some items are consistently on the agenda while other items change over the years, appearing once or twice, continuously over several years, and sometimes reappearing after a break. (Data for 2006 and 2007 are not available.)

Environmental media	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Water											
River reclamation	*	*	*	*	*	*			*		
Effluent standards			*	*	*	*					
Water for nature			*	*							
Pollution of aquifers	*		*	*	*						
Air											
Industry			*	*	*	*			*	*	*
Transport	*	*	*	*	*	*			*	*	*
Energy			*	*					*	*	*
Climate change						*			*	*	*
Waste											
Recycling		*	*	*		*					*
Reduction at source									*		
Reduction of hazardous waste					*	*			*		
Waste treatment					*	*					
Marine											
LBS reduction	*				*	*					
Coastal protection			*	*							
Biodiversity											
Protection of open space	*				*	*			*		
Ecosystems, species	*					*			*	*	

Environmental media	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Risk exposure					*				*	*	
Noise abatement			*	*							
Urban environment					*	*					
Implementation mechanisms		*			*						
Enforcement		*		*	*	*					*
Education			*	*	*						*
Information	*	*									
Economic									*		
Cooperation with NGOs	*	*	*	*					*		

Air pollution, recycling and river reclamation have consistently appeared on the government agenda over the years. Climate change came in relatively late in Israel compared to its place on the international environmental agenda. Waste reduction at source is not yet well established on the agenda. Risk exposure received special attention following concern over rocket attacks on the highly industrialized Haifa Bay. Whilst cooperation with non-governmental organizations is well recognized, public access to information on the other hand has not necessarily been awarded priority.

The problems of agenda setting are not confined to government. Agenda setting by NGOs can be highly problematic for different reasons. These organizations depend on public support and must be seen by the public to be active. Their very survival depends on their level of media exposure and their ability to obtain financial support from philanthropic funds depends on their ability to demonstrate activism. The items they therefore select for their agenda must have public interest and must be relevant to the current context. Their orientation is thus to immediate and short-term issues, for which they can gather public support. An

additional factor affecting how items appear on the agenda of NGOs can be the way in which funding is made available to them. Frequently it is confined to a 3-year program with no guarantee of continuation. The result can be a fragmented agenda, without coherence and continuity, which does not necessarily reflect the most important issues for environmental policy and which does not give weight to long-term policy making.

The following table shows the items on the agendas of several major environmental NGOs in Israel over the 4-year period 2007-10:

	2007	2008	2009	2010
Open spaces	SPNI	SPNI	-SPNI	-SPNI
Biodiversity	-	-	-	SPNI
Cliff shores	SPNI: Mediterranean Sea	IUED: Kinneret (Sea of Galilee)	-	-
Clean air/Climate change	IUED	IUED	IUED	IUED
Planning reform	-	-	-	IUED/ SPNI
Water	-	-	SPNI/ ZALUL	-
Transportation/ Highway 6	SPNI	SPNI	-	-
Recycling/Waste	IUED	IUED	IUED	IUED
Environmental justice	Life and Environment	Life and Environment		
Enforcement			IUED	IUED

Without a coherent long-term agenda, it is not clear if the conflicts the NGOs choose to raise, often in opposition to government or forcing government to take certain steps as regulator, are in line with long-term goals. In fact, although citizen participation is of utmost importance, it may result in wastage of scarce time and resources if focused on less significant issues with insufficient attention to the more vital issues at stake.

Consensus on a long-term agenda, accompanied by commonly accepted indicators and realistic visions of possible futures, would therefore benefit agenda setting by both government and the environmental movement by ensuring that each uses the tools in its toolbox to move forward along a commonly accepted road map to sustainability. Conflicts between them will undoubtedly continue to occur, but conflicts are not in themselves undesirable if conflict resolution moves the parties further along the right path.

Scenarios as joint agenda setting

Scenarios are a way of bringing stakeholders together to jointly view long-term trends, the factors underlying them and the uncertainties which may lie ahead. A scenario is a story, describing potential future conditions and how they came about, produced for a variety of purposes, e.g., to enable sense making, to test a variety of actions and to inform decision making. Scenarios have several characteristics that differentiate them from other futures practices, such as projections, predictions and forecasts. They are holistic (i.e., multi-dimensional); they relate to uncertainties; they come in sets of two or more; and they claim less confidence than other types of future statements. Scenario building has been widely used, particularly in the areas of security and energy, but also in global environmental frameworks.

They have been used by international organizations in coming to terms with uncertainty, such as by the Intergovernmental Panel on Climate Change (IPCC). The same methodology, developed by policy institutes, such as the Tellus Institute in Boston and the Stockholm Environmental Institute, formed the basis of the United Nations Environment Programme reports Global Environmental Outlook GEO3 and later GEO4. Their scenarios present 4 alternative future directions:

"markets first," with an emphasis on globalization and the dominance of trade and the economy, "policy first," with a focus on the role of the regulator, "security first," where forces outside government hold the centers of power (otherwise termed "fortress world"), and "sustainability first," with an emphasis on democracy and public involvement.

The European Environmental Agency and the OECD have combined more rigorous modelling together with more qualitative approaches to identify the issues for long-term policy setting.

Long-term policy making in Israel

Three previous documents have provided a long-term approach to some aspects of environmental policy making in Israel:

- *National Scenario for Environmental Quality in Israel 2000-2025* (prepared 1992) (JIIS)
- Environmental sections of the *National Masterplan 2020* (prepared 1996) (Association of Architects and Engineers in Israel for the National Board for Planning and Building)
- Environmental chapter in *Israel 2028* (prepared 2008) (US-Israel Science and Technology Foundation)

However, none of these documents provides a framework for environmental governance within a context of long-term policy that focuses on sustainability.

Looking at the long-term future is full of uncertainties. 2030 will not try to forecast a likely future but will try to clearly put on the table the range of possible futures and the paths towards them, backcasting rather than forecasting. It will provide a framework, not a work plan. It will leave the concrete immediate decisions up to the current administration, but it will provide a well-defined range of choices concerning where actions need to be taken to promote the sustainable pathway and where the lack of action will result in an unsustainable pathway (the implications of inaction).

2030 will indicate how to assess the choice of alternative and complementary mechanisms for action by evaluating the efficiency and effectiveness of instrument packages. Good intentions have not necessarily achieved good results by the trial and error of concentrating manpower and resources into ineffective implementation mechanisms or by the operation of contradictory mechanisms by different arms of government. 2030 will identify how instrument packages need to be built in a coordinated way, to overcome barriers and to enable achieving the desired results in an effective and equitable manner.

Sustainability is determined by a wide range of actors, in the context of "governance," not just by "government." The path to sustainability therefore involves a wide range of actors each responsible for their own policies and tools but all within an agreed direction where each can strengthen the other in pursuit of common benefit. However difficult it may be to bring conflicting actors together to agree on immediate proposals, it is usually easier to bring them together to build synergy on a longer-term framework within which each can build partnerships for achieving commonly set goals. Agreement on the overall long-term direction may assist in reducing waste of energies by government and non-governmental groups on peripheral issues or minor conflicts and help focus energies on getting onto the right path for sustainability.

Structure of the Project

2030 will consist of 5 sub-projects, each of which has individual value but together create a knowledge-based long-term conceptual policy framework and mechanisms for its implementation.

1. Indicator base

The indicator base for the Outlook will be undertaken in 2 stages:

- a) Comparison of sustainability indicators in Israel with OECD countries concerning economic, social and environmental indicators of performance;
- b) Development of a new indicator base to better reflect wellbeing and resource capital base and flows, which are now at the forefront of current international research on measures "beyond GDP."

2. Expert Base

The expert base for the Outlook will be undertaken by professionals, each of whom will be requested to harness his/her knowledge to identify existing processes and patterns, and anticipate possible future trends relevant to scenario building for sustainability

- a) Experts in socio-economic, technological and governance issues that will determine the likely driving forces affecting the environment of the future and how the resulting opportunities and risks may affect different communities;
- b) Experts in the environmental resource base and flows and the ways they are managed which are likely to be affected by the driving forces.

3. Scenarios

Short-term trends are generally identified through mathematical modelling based on the extrapolation of existing and past trends. Long-term trends however do not necessarily reflect the past and cannot be determined in an accurate way by modelling. 2030 will therefore be based on building scenarios of possible futures, a scenario of "business as usual" and 4 alternatives to be compiled by the core team of the project through a series of workshops at which the indicator base and the expert base will be reviewed to reach several possible futures and realistic-desired "visions" for sustainability in Israel. They will consider such themes as population and consumption trends, economic growth, future directions of global trade and its implications for Israel, the possibilities of agreement or continued lack of agreement in the Middle East, increasing global sovereignty concerning the environment, the prospects for technological advance of significance to the environment and the possible implications of a major ecological disaster. The scenarios will seek to enhance opportunities and resilience and to reduce risks and vulnerability.

4. Instrument packages

Instruments are often evaluated as alternatives (regulatory, economic, informational and institutional), but greater benefit may be achieved by viewing instruments as complementary or contradictory. The project will review how

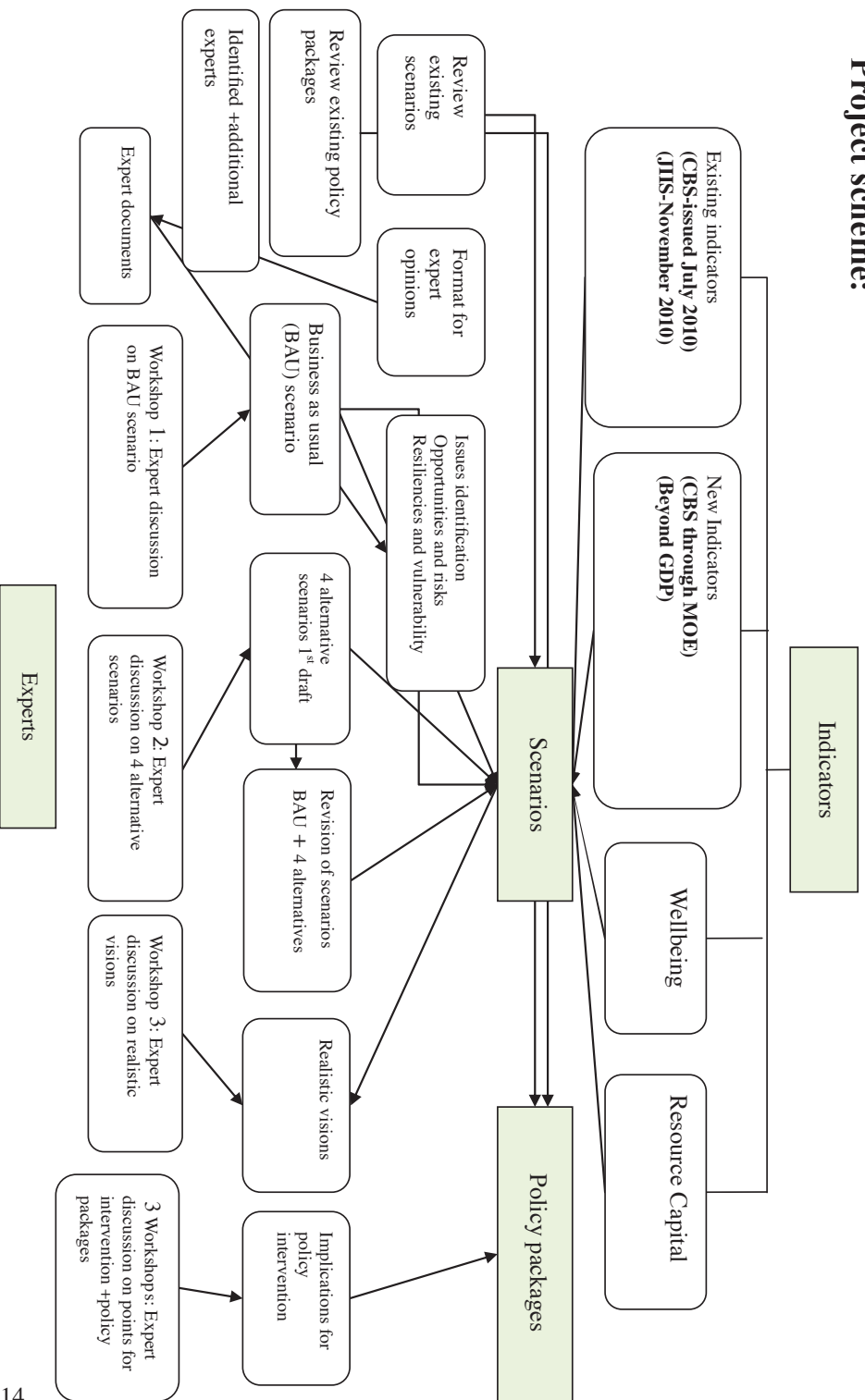
to maximise the efficiency and effectiveness of instrument mixes or packages to enable and promote sustainability scenarios, to overcome barriers to their implementation, to ensure an equitable distribution of benefits and to reduce the risks of unsustainability. 2030 will demonstrate the benefits of formulating instrument packages in relation to a number of key issues which will be identified in the scenarios as in need of intervention to ensure that Israel will be on the path to sustainability. They are likely to include instrument packages related to energy, transportation and resource consumption and waste.

5. Outlook for Israel 2030

Throughout the project, the outlook team will bring together the conceptual bases and the practical applications into an integrated policy document appropriate to long-term policy on moving towards a sustainable path by 2030. It will review international and other national experience on long-term sustainability outlooks and compare how Israel is likely to find itself in relation to OECD countries. The project will conclude with the preparation of a final policy document to be presented to government and made available to all relevant stakeholders. Dissemination of the intermediate results of the projects will be undertaken throughout the preparatory stages, but major attention will be focussed on bringing the final paper to the attention of stakeholders in government, the private sector and in civil society, using conventional and new media.

The Sustainability Outlook will be available mid-2012, in time to enable its adoption and presentation by government that year to enable fruitful discussions with the OECD concerning a revision of its Outlook (to 2050) and the scheduled global summit Rio+20 Summit to be held in Rio de Janeiro.

Project scheme:



The Target Audience

The primary target audience are policy makers in government, but the Outlook will be of interest and use to those groups who impact on and influence policy makers.

Government Ministries: Prime Minister's Office, Environmental Protection, Finance, Industry, Trade and Labour, Agriculture, National Infrastructures – particularly the departments concerned with policy and planning. It will also be most relevant to the members of the InterMinisterial Committee for Sustainable Development and to the Planning Committees, particularly the National Board for Planning and Building for discussions related to National Master Plans;

Parliament: particularly the environmental lobby but also as background material for discussions in the Committee for Interior and Environmental Quality;

NGOs: especially those concerned about the environment at the national level and which have a strong influence through the media on policy makers;

Local authorities: both the leading urban independent authorities, Forum 15, and the rural authorities;

Private Sector: which could become partners in harnessing opportunities and minimizing risks.

Representatives of the target audiences will be invited to form the steering committee for 2030, to review and comment on interim results and their dissemination. Involving the target audiences from the outset will increase the "ownership" of the project by the target audiences and thereby the likelihood of its acceptance when completed.

The Indicator Base*

Indicators for sustainable development are signs which help to reveal development trends and show to what extent they correspond to or contradict the advancement of sustainable development. Indicators examine pressures on environmental resources and their causes and help indicate possibilities for reducing these pressures efficiently. They are designed in such a way as to present the current state and trends of change in relation to long-term targets. In this way, they serve as more than a monitoring measure but also as a tool for policy formulation by decision makers.

Indicators also help to check whether development takes into account the scarcity and vulnerability of environmental resources and uses them cautiously and prudently, or needlessly depletes them. One of the main aims of the indicators is to set "red lights" in those areas in which discerned trends substantially contradict sustainable development principles. Their role is to guide human actions so that most of the resources remain for present and future generations and to assure well-being and ample opportunities to the general public, including the weaker sectors of the population.

The process of formulating sustainable development indicators in Israel began with discussions about the nature of such indicators, their compilation from different sources and their appropriateness to local conditions. A range of experts from different disciplines participated in the discussions and reviewed development trends and indicators that would be most suitable for depicting trends in Israel.

A report entitled "Sustainable Development Indicators in Israel, Summary Report Phase I" (2006)¹ first proposed a series of indicators, some of which were based

* Based on M. Kaplan, A. Eidelman and G. Cohen (eds.), *Indicators for Sustainable Development in Israel: Second Phase* (Jerusalem: Jerusalem Institute for Israel Studies, Ministry for Environmental Protection and Central Bureau of Statistics, 2009).

¹ E. Feitelson (ed.), *Sustainable Development Indicators in Israel* (Jerusalem: Jerusalem Institute for Israel Studies, 2006).

on international sources following adaptation to Israel's needs, and some of which were developed from the outset to respond to Israel's unique conditions. Although Israel resembles developed Western countries, it nevertheless differs from them in term of its dimensions, physical conditions, rate of development and way of life. The accelerated development which the country has witnessed over the past 60 years is essentially unmatched in Western countries. Israel's population grew more than tenfold from the time the state was first established and massive development was needed to respond to such accelerated growth – in terms of built-up area, industry, infrastructure development and utilization of scarce land and water sources.

Alongside the emphasis placed on environmental aspects and the need to leave resources for future generations, indicators were also chosen to reveal social and economic trends. Concern for the weaker sectors of the population and prevention of poverty and economic deterioration are significant directions in achieving sustainable development and are represented by a specific series of indicators.

This system of indicators will serve as a tool for policy makers, government bodies and the environmental administration in monitoring the success and effectiveness of trends in achieving sustainable development.

Existing Indicators*

The indicator base for Sustainability Outlook 2030 will initially comprise updated readily available information, presented in a format which explains the importance of the indicators for sustainability in Israel and which shows actual trends over the last 20 years. It will also show where we are likely to find ourselves according to each indicator if the same trends continue ("business as usual" scenario) for a further 20 years.

The areas to be covered fall into 2 sections: driving forces which impact on the environment and the state and trends of environmental resources.

Driving Forces

The indicators included were selected to provide a review of factors having a highly significant effect on environmental resources:

Economic indicators:

- GDP per capita
- Expenditure on food according to income

Energy:

- Energy consumption per capita
- Energy consumption per unit GDP

Transport:

- Car ownership
- Kilometers traveled

Household consumption:

- Household waste per capita
- Household water consumption per capita

* The indicators will be prepared by Dr. Amir Eidelman and Yael Yavin.

Environmental Resources

Air Quality:

- Nitrogen Oxides
- Sulphur Dioxide
- Particulate Matter

Climate Change:

- Greenhouse gas emissions

Water:

- Salinity of the Coastal and Mountain Aquifers

Land:

- Change in land use

Biodiversity:

- Species at risk

Future Indicators*

Further work on indicators will follow the conceptual framework presented in the Report by the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz, Sen and Fitoussi, 2009) which maintained that "what we measure affects what we do" and that "choices between promoting GDP and protecting the environment may be false choices, once environmental degradation is appropriately included in our measurement of economic performance." The report recommended that a more complete set of balance sheets of the economy was required, which could give a comprehensive picture of assets, debts and liabilities of the main actors in the economy and which would reflect economic, environmental and social dimensions in a framework of sustainability.

The report recommended that emphasis be shifted from measuring economic production to measuring people's wellbeing, looking at income and consumption and giving emphasis to the household perspective. It defined wellbeing as multi-dimensional, including living standards, health, education, personal activities, political voice and governance, social connections, present and future environmental conditions and economic as well as physical security. It recommended that decisions relate to quality of life indicators that adequately assess inequalities.

It proposed that a more pragmatic approach be adopted to measuring sustainability, reflecting variations and changes in the "stocks" of natural resources, how well they are being maintained and whether countries are over-consuming their wealth. The environmental aspects of sustainability should not only include those resources with a monetary value but also those which could indicate irreversible alterations to the environment, such as climate change.

The Israeli Central Bureau of Statistics, together with JIIS and the Ministry of Environmental Protection, are reviewing how the recommendations of this report

* Based on a document edited by Amit Yagur-Kroll, Senior coordinator, Environmental Statistics Division, Israel Central Bureau of Statistics.

could be implemented in Israel. In some cases, data are available but have not been presented or analyzed according to the recommended framework. In many cases, data have not been collected in a way which could enable the development of the recommended indicators. During the Sustainability 2030 project, ICBS will review and implement, as far as existing data permit, the preparation of a new indicator base which reflects the recommendations of the report. Where data are not currently collected, it will recommend modifications and additions to current surveys within the future work program of ICBS.

Particular attention will be paid during the 2030 project to implementing the concept of wellbeing.

Scenario Building*

The aim of the scenario building is to expose to decision makers, the business sector and civil society in Israel a number of environmental futures in order to identify long-term uncertainties, risks and future opportunities. It is designed to promote awareness of long-term environmental processes, to identify the driving forces likely to affect the environment in Israel and to assist in policy formulation.

The scenarios are stories which challenge what may be expected to happen in the future. Their role is to expose the complex sets of factors which are likely to affect the environment, to focus attention on them, to find solutions to problems likely to arise in the future and thereby improve the conceptual basis for decision makers. Scenario building differs significantly from scientific modeling, which focuses on past and present evidence, by proposing questions concerning future processes and possible models which represent them.

The main forces affecting the environment will not only come from environmental conditions but also from social and economic driving forces, and from governance and technology. In response to the "flattening" of the global world, relevant social, economic, political and technological processes occurring outside Israel will be reviewed.

The aim of the scenario building is to bring to light the significant challenges which policy makers are likely to face in the future and improve the "conceptual environment" within which decisions will be taken, thereby contributing to the development of strategic thinking. That is not to say that the scenarios will necessarily be partly or wholly realized. The important outcome is the "conceptual environment" which will enable flexibility in thinking through understanding conditions different to the present. Ian Kershaw, in his book *Fateful Choices*:

* The Scenario Building phase will be developed and directed by Professor Shlomo Hasson of the Geography Department, the Hebrew University of Jerusalem, and Head of the Futura Institute.

Ten Decisions that Changed the World, 1940-1941,¹ quotes Winston Churchill when considering 2 alternatives in May 1940: to negotiate or to go to war. The development of 2 possible scenarios, through identifying the causal factors, enabled Churchill to take the decision to refrain from entering negotiations with Hitler and to continue the war.

The specific aim of developing scenarios is to review long-term conditions in order to promote strategic thinking. Such thinking is based on 3 main areas: review of the trends and processes taking place (past, present and future), formulating a vision in the desired direction, and providing the instrument to reach the vision in relation to the trends and processes occurring. The US National Council for Intelligence in the document "Global Trends 2025: a Changing World" asks, "why prepare scenarios?" and answers: in order to enable strategic thinking by mapping out main trends, the factors underlying them and the linkages between them. Scenarios are used to review how trends and factors influence and are affected by each other and what are the challenges and opportunities which policy makers will need to face in the future. This is exactly one of the aims of Sustainability Outlook 2030: to determine what are the likely trends and processes, to review the challenges likely to be faced by policy makers, to formulate a guiding vision in light of the situation and to review which strategies are likely to promote or restrain attaining the vision.

The main difficulty in realizing this aim lies in the enhancement of complex long-term thinking among policy makers. It reflects their generally short-term conceptual framework and the divide between policy and decision makers. The best way of coping with this problem is by bringing decision makers into the process. Such involvement builds confidence and makes it easier to adopt decisions. The process of building scenarios is therefore no less important than the scenarios themselves.

The following questions will be at the center of the scenario-building process:

¹ I. Kershaw, *Fateful Choices: Ten Decisions that Changed the World, 1940-1941* (New York: Penguin Press, 2007).

1. What are the current environmental issues in Israel and what determines them? What are current trends in the light of such issues? These questions deal with the identification of processes which have occurred in the past and those likely to occur in the future.
2. What are possible futures in the light of current and future trends? This question will lead to the development of scenarios of possible future situations which may not be desirable.
3. What is the most environmentally desirable future in Israel? This question will lead to the formulation of a desirable future as a guiding vision.
4. What are the strategic actions which can promote possible conditions – scenarios – towards the desired situation – the vision? This will require a review of the likely gaps between the possible futures and the desired future situation. It will also require a review of barriers with which policy makers will have to cope in bridging the gaps and a review of the opportunities they may be able to take.

The methodology for scenario building will consist of the following elements:

1. Literature review
 - Of scenario building, including the methods and contents, which would be relevant to environmental scenarios, as developed by various institutions;
 - Of processes likely to affect the environment.
2. A conceptual map, to identify the driving forces which will determine the scenarios
 - The conceptual map represents the system of causal factors which determine the environment: demographic, economic, political, technological and social and the environmental factors: climate, ecology;
 - The driving forces of the system will be identified from the conceptual map and classified into those which are certain and those which are uncertain;

- A range of scenarios will be formulated on the basis of the uncertain driving forces.
3. Scenario formulation
 - Preparation of a scenario which will represent continuation of the existing situation ("business as usual" scenario);
 - Preparation of 4 alternative scenarios, through the identification of different paths to that of the BAU scenario.
 4. Insights from the scenarios
 - Consideration of additional factors, processes and stakeholders;
 - Understanding of what may be expected and how to handle the likely situations.
 5. A realistic vision will be formulated based on the scenarios and the insights gathered from them. This stage will review different types of visions, from the positive to the defensive vision and a satisfactory vision. The positive vision will attempt to reach a "realistic ceiling" and the defensive vision will represent the "realistic floor."
 6. A strategic action plan will relate to the following issues:
 - What needs to be done? This stage will include identifying barriers which could interfere with realizing the vision and identifying the opportunities which could assist in its attainment. The strategic action plan will therefore include negative strategic actions concerning what to prevent as well as positive strategic actions on what to promote.
 - With whom and how to promote? This stage will relate to the ways to work with policy makers, the business sector and civil society.

Policy Packages*

The complexity of environmental issues requires the implementation of policy through a range of instruments which can be of limited effectiveness when used separately but are far more effective when combined into packages of instruments which support and supplement one another. The difficulties of relying on a single instrument for meeting the needs of a complex issue are well known, for example concerning transportation issues. A range of instruments is therefore usually included in any national or sectorial strategy or program designed to cope with environmental issues, whether in the context of a national environmental plan or whether as part of the plan to cope with environmental issues within the plan for a particular sector, such as transport or industry. Research has not been undertaken to date concerning the desirability and the benefit of coherent packages of policy instruments.

A further issue concerns the acceptability of policy instruments. Research has, for example, frequently given preference to the use of economic instruments. Their use in fact has been limited, possibly because of their distributional implications and the negative views by which they are seen by strong interest groups. Conversely, less effective instruments may actually be far more acceptable. A policy package has therefore to take into account how to increase the acceptability of the instruments including overcoming opposition through the addition of instruments which make the package attractive even to those opposing a particular instrument within the package. The issue of packaging policies has been raised in the context of transportation planning but not so far in the context of environmental policy.

Research aims

The research project will enhance methodologies for formulating policy packages and apply it to environmental policy in Israel. The methodology and its application

* The Policy Packages phase will be developed and directed by Professor Eran Feitelson of the Geography Department (former Head of the School of Public Administration), the Hebrew University of Jerusalem.

will relate to the question of the efficiency of the policy and the acceptability of its implementation. The research will therefore include the analysis of various tools for implementation and an analysis of their distributional effects, including their impacts on various interest groups. Policy packages will be proposed on the basis of the analysis which will come to terms with issues of effectiveness and social impact and with the possibilities of political opposition to main elements of the package.

Conceptual framework

The formulation of policy packages consists of 5 stages:

1. Defining the starting point
Defining the starting point depends on identification of an undesirable situation and a clear definition of the problem. Scenario building or the evaluation of alternatives can provide ways by which this starting point can be defined.
2. Environmental problems, like all complex problems, are unlikely to be solved by a single instrument. Most instruments, moreover, require the identification of pre-conditions and supplementary measures. The effectiveness of the main instrument therefore needs to be assessed, as well as its costs of implementation, the authority needed for its operation, its externalities on other policy areas, the pre-conditions for its implementation (such as the need for monitoring when proposing taxation on emissions) and possible behavioral responses to its operation.
3. The acceptability of proposed measures is a major problem in all areas of public policy, including that relating to the environment. Acceptability has 2 facets: social and political. A socially acceptable measure is one which does not disproportionately impose pressure on socially weak parts of the community or damage an accepted important norm (such as a holy place). The distributional effects of measures will therefore be assessed and where an unacceptable level of pressure or damage is expected, the implications of exchanging the proposed measure with an alternative measure will be examined or measures found to reduce the impact or to provide compensation to those affected.

4. The chances of implementing policy depend to a large extent on its political acceptability. It is therefore essential to analyze the political implications of proposed measures. The measures proposed will therefore be analyzed to assess the strength of interest groups likely to be affected (positively or negatively) and to identify the steps needed to cope with potential opposition. The research will therefore identify likely interest groups (whether formal or informal stakeholders) and analyze their values and positions in a similar way to processes of conflict resolution. It will assess the possible influence of strong interest groups and whether steps could be negotiated which would reduce opposition and increase the acceptability of the policy package. The policy package would therefore consist of a basic measure, its preconditions and supplementary measures for its effectiveness, measures to compensate groups likely to be adversely affected which would be socially unacceptable and measures to reduce the opposition of strong interest groups.
5. The final stage will assess the package as a whole and its costs, and whether the transaction costs for its implementation could be reduced.