THE VISIONS PROJECT AT THE JRC

Report written by Ângela Guimarães Pereira
Some of its parts are based on the report made by Giberto Gallopín
in fulfilment of contract no. ISIS – JRC, European Commission no. 15072-1999-06 F1EI ISP SE.

http://alba.jrc.it/visions
THE MISSION OF THE JRC

The mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making processes, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

LEGAL NOTICE

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of the following information.

EUR 19926 EN
© European Communities, 2001

Printed in Italy
ACKNOWLEDGEMENTS

We thank...
all the other VISIONS partners; Jerry Ravetz for his review and
preface; Bruna De Marchi from Istituto di Sociologia Internazionale
di Gorizia, for her collaboration in the focus groups facilitation; all
participants of the social research process; Piera Cicceri from
Laboratorio Laura Conti, Dr. Giuseppe Seno from Provvedoria Studi
Venezia and the teachers Leonardo Orlandi from Scuola Media
Morosini, Pietro Tonegato and Gabriella Ricio from Scuola Elementare
Gallina, for their help in organising the young groups; Dr. Andrea
Pozzi and Dr. Anna Civai from Università della Terza Età for organising
the elder groups. Ms. Cherith Aspinall for reviewing this document.
THE VISIONS PROJECT

The VISIONS Project (Integrated Visions for a Sustainable Europe) was a three-year project which started in February 1998. It was funded by DG RTD of the European Commission through the 4th Framework Programme, Theme 4 Human Dimensions of Environmental Change (Contract no.: ENV4-CT97-0462). VISIONS involved the collaboration of nine institutions:

- International Centre for Integrative Studies (ICIS) – University of Maastricht, Netherlands – co-ordinator;
- Rijksinstituut voor Volksgezondheid em Milieuhygiene, Department for Environmental and Nature Assessments (RIVM.ENA), Netherlands;
- Research Institute for Knowledge Systems (RIKS bv), Maastricht, Netherlands;
- European Commission – Joint Research Centre, Ispra, Italy;
- Centre d’Economie et d’Ethique pour l’Environnement et le Developpement (C3ED) – University of Versailles Saint Quentin-en-Yvelines, France;
- Department of Planning and Landscape – The University of Manchester, UK;
- Manchester School of Management (UMIST), Manchester, UK;
- The Research Methods Consultancy – London; UK;
- Human Ecology Group, Eidgenoessische Anstalt fur Wasserversorgung, Abwasserreinigung und Gewasserschutz (EAWAG), Switzerland.

This document and the CD-ROM that accompanies it contain materials and describe the activities of the Joint Research Centre over the three years of the project.

The VISIONS project’s main objective has been to bring together both physical and social science tools and techniques, to assist, broaden and deepen the process of policy making for sustainable development. Its ambition has been to raise awareness of sustainable development by increasing the understanding of the inter-linking of social, cultural, economic and environmental processes and by improving the assessment of the policy consequences for Europe in an integrated way.

VISIONS is about the FUTURE and about good governance!
The ultimate aim of the project was to develop integrated visions for a sustainable Europe, as qualitative narratives with some quantitative ingredients. The project developed scenarios for Europe itself and for 3 European regions: Venice, Manchester and the Green Heart in the Netherlands – metaphors of places in Europe...

Integrated Assessment has framed the work developed in the project, and so as part of its operational objectives it sought to test new and existing scientific tools and participatory methods for scenario building to enhance the process of integrated policy making for sustainable development.

The involvement of actors of policy and decision processes - policy makers, business community, NGO’s, public, etc. in the design and tuning of the integrated visions must be seen as a quality assurance process, helping amongst other things with the identification and evaluation of consensus and conflict between multiple perspectives in alternative scenarios.

The participatory processes deployed in VISIONS have led to some research into interfaces between scientific and non-scientific audiences, including the conditions and types of efficient involvement of actors of policy and decision processes in sustainable development challenges and debate, taking into account several publics concerned.

While we are finishing this report, the white paper on European governance (COM(2001)428) has been published. It states that: “The White Paper proposes opening up the policy-making process to get more people and organisations involved in shaping and delivering EU policy. It promotes greater openness, accountability and responsibility for all those involved. (...)” In fact participation and openness are two of the five principles that underpin good governance:

“The quality, relevance and effectiveness of EU policies depend on ensuring wide participation throughout the policy chain: from concept to implementation …” and “The institutions should work in a more open manner. (...) They should use language that is accessible and understandable for the general public.”

In the opinion of the developers of this project, VISIONS has contributed to responding in operational ways to progress from governance to the future of Europe which will face in the coming decades accelerating change, complexity and uncertainty...
PREFACE

The JRC 'Venice Team' have already shown themselves to be skilled and imaginative researchers and innovators. In the present project they have carried their work to a new level of excellence. With scenarios they are involved in objects that are partly scientific, partly political and partly poetic. Pitfalls are everywhere; but the opportunities for creative work are correspondingly great. The team have risen to this new challenge. With great insight and sensitivity, they have distinguished the different aspects of their task and then made a harmonious integration of all the disparate elements. They have also produced a package that can now be applied to a variety of contexts and problem-situations. All those who are involved in the tasks of education for sustainability will find this a most valuable production.

Dr. Jerome R. Ravetz
Report: The VISIONS Project at the JRC - VISIONS: AVENTURES INTO THE FUTURE

1. VISIONS
2. Envisioning The Future: 4 Scenarios For Venice In 2050
3. Planning The Social Research
4. Interfaces: Telling The Stories
5. Main Findings: What Has Been Said And Beyond
6. Integration Of Venice Scenarios With Higher-Level Scenarios
7. Reflections

Appendices

Appendix 1: Telling The VISIONS Stories In Several Flavours: Slides, "Press Articles", Video Clip Screenplays, etc.
Appendix 2: Driving Forces Of Venice Scenarios
Appendix 3: Visions About Visions: Materials Produced By The Focus Groups
Appendix 4: Integration Of Venice Scenarios With Global Scenarios

VISIONS - Adventures into the future
# TABLE OF CONTENTS

## 1 VISIONS

1.1 Objectives

1.2 Research Design

- 1.2.1 Starting Our Adventure
- 1.2.2 Building Scenarios
- 1.2.3 Involvement Of Social Actors
- 1.2.4 Integration With Higher Level Scenarios

## 2 Envisioning The Future: 4 Scenarios For Venice In 2050

2.1 About Scenarios

- 2.1.1 Scenarios: Methodological Elements
- 2.1.2 Scenarios: Epistemological and Psychological Considerations
  - 2.1.2.1 Uses Of Scenarios
  - 2.1.2.2 The Role Of The World View
  - 2.1.2.3 Assessment Of Scenarios

2.2 First Set of Scenarios

- 2.2.1 Venice 2050: Four Images
- 2.2.2 Tuning of the Scenarios
  - 2.2.2.1 Tuning Of Contents
  - 2.2.2.2 Tuning The Plot

2.3 Tuned Scenarios

## 3 Planning The Social Research

3.1 Social Actors In Venice

3.2 Social Research Planning

- 3.2.1 In-depth Interviews
  - 3.2.1.1 The Interviewees
  - 3.2.1.2 Organisation Of The Interview
  - 3.2.1.3 Agenda Of The Interview

- 3.2.2 Focus Groups
  - 3.2.2.1 Recruitment And Composition Of Focus Groups
  - 3.2.2.2 Organisation Of The Sessions

3.2.3 Agenda Of The Focus Groups Sessions

- 3.2.3.1 Focus Groups With Older Participants
- 3.2.3.2 Focus Groups With Younger Participants

VISIONS - Adventures into the future
TABLE OF CONTENTS

4 Interfaces: Telling The Visions Stories
   4.1 Process: design of the society – science interface 44
   4.2 Telling the Stories to In-depth Interviews 48
      4.2.1 Assumptions 48
      4.2.2 From Bullet Points To “Press Articles” 48
   4.3 Telling The Stories To Citizens 51
      4.3.1 Assumptions 51
      4.3.2 Development of Multi-Media Materials 51
      4.3.2.1 Groups of citizens more than 60 years old 51
      4.3.2.2 Groups of citizens less than 14 years old 52
   4.4 From Articles To Cartoons To Web... 54

5 Main Findings: What Has Been Said And Beyond...
   5.1 Visions For Venice: A Process And A Product. 55
      5.1.1 Development of Scenarios – A Quality Assurance Process 55
      5.1.2 Development of Scenarios – A Product 56
      5.1.3 Main Findings 56
      5.1.4 Observations In Relation To The Four Scenarios And Drivers 71
   5.2 Participatory Methods & Scientific Tools 74
      5.2.1 Process: Design Of The Society – Science Interface 74
      5.2.2 Participatory Methods 74
      5.2.3 Findings 75
      5.2.4 Scenarios For Participatory Methods 77

6 Integration Of Venice Scenarios With Higher-level Scenarios
   6.1 Integration With European Scenarios – Story 1 78
      Detailed Comparison of Scenarios 80
   6.2 Venice & Europe – Story 2 88

7 Reflections 89

References 91

Cartoon Picture References 94

APPENDICES A.1
FIGURES AND BOXES

Chapter 2
Box 2.1 Anatomy of scenarios
Box 2.2 Current (local) driving forces
Figure 2.1 Unfolding of scenario Gotham City
Figure 2.2 Unfolding of scenario City Machine
Figure 2.3 Unfolding of scenario Venice Inc.
Figure 2.4 Unfolding of scenario Cyberia

Chapter 3
Box 3.1 Classification of social actors
Box 3.2 The interview guide - 1st round of in-depth interviews
Box 3.3 The interview guide - 2nd round of in-depth interviews
Box 3.4 Objectives pursued in this phase of the social research through Focus Groups with citizens (age >60)
Box 3.5 Objectives pursued in this phase of the social research through Focus Groups with citizens (age <15)

Chapter 4
Box 4.1 Basic anatomy of a presentation of a scenario to the interviewees
Box 4.2 Basic anatomy of a presentation of a scenario to the older groups
Box 4.3 Basic anatomy of a presentation of a scenario to the younger groups

Chapter 5
Box 5.1 Comment by Gilberto Gallopin to the Venice Inc. scenario

Chapter 6
Box 6.1 Summary of Venetian scenarios compatibility with European ones
Figure 6.1 Compatibility between European scenarios and Venetian Scenarios.
Box 6.2 Gotham City and Knowledge is King
Box 6.3 Gotham City and Convulsive Change
Box 6.4 Cyberia and Knowledge is King
Box 6.5 Venice Inc. and Big is Beautiful
Box 6.6 City Machine and Big is Beautiful
Box 6.7 City Machine and Convulsive Change
CONTENT AT A GLANCE

1. VISIONS
2. Envisioning The Future: 4 Scenarios For Venice In 2050
3. Planning The Social Research
4. Interfaces: Telling The Stories
5. Main Findings: What Has Been Said And Beyond
6. Integration Of Venice Scenarios With Higher-Level Scenarios
7. Reflections

REPORT: VISIONS - ADVENTURES INTO THE FUTURE

The VISIONS Project (Integrated Visions for a Sustainable Europe) was a three-year project which started in February 1998. It was funded by DG RTD of the European Commission through the 4th Framework Programme, Theme 4 Human Dimensions of Environmental Change (Contract no.: ENV4-CT97-0462).

Here we describe the activities of the JRC team within the VISIONS project. We start by describing our research objectives and design. Scenarios for Venice in 2050 have been developed being described in Chapter 2. In Chapter 3 details of the organisation and structure of social research are presented whilst Chapter 4 describes technical and conceptual matters about the preparation of the scenarios to participants. Chapter 5 documents the participants' reactions, suggestions and concerns and eventually our suggestions for the use of scientific materials in the context of non-scientific audiences. Finally, Chapter 6 concerns the integration of Venice scenarios with higher level ones. Enjoy this adventure!
We are in 2050... The intrepid traveller Marco Polo and Kublai Kan are seated in a beautiful room at the Kan's palace...

Marco Polo tells Kublai Kan about several cities he has visited...

- Tonight I'll tell you about four cities... Vinegia, Venusia, Venetia, Veniexia... — says Marco Polo. — Living conditions at Vinegia have deteriorated very much; air and water pollution have increased to levels that significantly affect human and ecosystem health... (...) Vinegia is a ghost city...

Then he goes on with Venusia: — Venusia has become a tangible paradigm of the application of the engineer approach to complex hazards. Big barriers cover the entrances to the lagoon to protect the city against flooding... (...) The city looks like a machine...

- Well, Venetia has been growing steadily and it now generates unprecedented profits; it has become one of the four most important tourist destinations of the world (...) It is a museum city and a theme park...

Finally he tells about Veniexia: — In Veniexia, people have learned to live with the high tides. (...) A variety of cyber-jobs, highly creative and with low environmental impact, now provide occupation. Veniexia is now a sort of Silicon Valley for culture...

Kublai Kan is silent, reflecting...

- Well he said, the cities you are telling me about seem to be the same city... Maybe your stories are different ways of looking at it. Perhaps a vision of Europe...

In another moment, Kublai Kan wishes to see Venice with his own eyes... so, he asks Marco Polo to take him to that magnificent city through the parallel-world box!

- I have another wish... take me to this wonderful city, Venice! — Says the Kan.

- Hum... Well, OK! Touch this box, the box of parallel-worlds, and close your eyes... concentrate!

And so they slide into parallel visions of the city...

The participants of our groups and interviews would have to embark with us in this adventure of imagining the future... and so debate could be set about the challenges of arriving to a desirable future, identifying the paths that will have to be pursued to achieve it...
1. VISIONS

In this section main results of the implementation of the project at the JRC are reported in terms of products, processes and findings in relation to research objectives.

Three main products are derived from this study: the first one consists of the scenarios and visions for the city of Venice tuned through a social research process. The second product consists of integrated visions of Venice scenarios and the European ones. Finally, the third product consists of the analysis of the conditions in which scenarios can be used as a tool to enhance the debates about sustainable development, including the contradictions of sustainability.

There are two main processes that resulted from this research: a quality assurance by extended peer review process of the scientific inputs to social discourse and the process itself of designing an interface between science (the scenarios) and the society (citizens and social actors of Venice).

We start by describing our research objectives and design. Materials used to introduce participants to the discussion topics are enclosed in Appendix 1, the scenarios themselves being described in Chapter 2. In Chapter 3 details of the organisation and structure of social research are described whilst Chapter 4 describes technical and conceptual matters about the preparation of the scenarios to participants. Chapter 5 documents the participants' reactions, suggestions and concerns and eventually our suggestions for the use of scientific materials in the context of non-scientific audiences. Finally, Chapter 6 is concerned with the integration of Venice scenarios with higher level ones.

1.1 OBJECTIVES

The following are the major guidelines that guided our research and lead our analysis of processes and products of the VISIONS project. These are derived from the objectives stated in the VISIONS Work Programme and have been translated into multi-level operational goals:

(a) To develop scenarios for Venice in order to explore:
   ■ Issues of sustainability, agency and policy inherent to the future problematic?
   ■ The contradictions of sustainability
   ■ Whether there could be a sustainable vision for Venice and for Europe on 2050.
(b) To create social research contexts, in order to:
Enable people to explore the links between environmental and socio-economic processes emerging from envisioning the future.
- Explore the integration of different perspectives in the scenario building process.
- Evaluate the actors' place, agency and determination about taming the future – and inclusiveness in policy making.
(c) To create contexts of interaction with scientific tools, in particular scenarios and information technologies in order to examine:
- How people relate to scenarios and IT
- How scenarios influence the perception of the FUTURE
- How scientific tools (in particular scenarios) can be integrated in social processes by triggering awareness, discussion and by developing agency.
- How people can suggest adaptations or modifications of it in order to improve its effectiveness for their purposes.
(d) To evaluate the experience of research done on the basis of qualitative, interactive individual and group work compared to other modes.

1.2 RESEARCH DESIGN

1.2.1 Starting Our Adventure

We have started by imagining the future of Venice in 2050 using scientific knowledge... Then we have imagined a plot to present those futures to social actors that could have a stake in the future of Venice... We have been together in the future through several types of stories designed to suit the audience... Together in this adventure, we have initiated a debate about what entails a desirable future, what are the contradictions of sustainable developments in Venice... What should we do now to attain the desirable future? Who should do it? In this way, by integrating local knowledge, we have tuned our scenarios and contributed to the integration of regional and European paths as VISIONS required. And that was our metaphoric adventure into the future...

In ULYSSES (De Marchi et al. 1998) we have pointed out how metaphors can ease a participatory activity that entails remote or complex concepts with audiences not familiar with those and the experience itself, providing an efficient means of communication and interaction between audiences and scientists.
1.2.2 Building Scenarios

The implementation of the VISIONS project at the JRC followed the work programme of the project so the JRC team and collaborators have been involved in the identification and characterisation of a small set of plausible scenarios for the city of Venice, with a time horizon of 50 years. Four alternative scenarios and visions have been identified for Venice. They refer basically to the historical centre and the estuary, more than to the mainland area of Venice ("terraferma"); they are qualitative and were prepared in the form of narratives. The local driving forces have been identified (on the basis of available information), which in interaction with higher-scale (regional, national, global) forces, strongly influence the branching of Venice’s historical trajectory into alternative futures. Hence, each scenario corresponds to a possible trajectory for the city of Venice that takes into account present driving forces and for which a source logic behind its unfolding explains its coming into being.

1.2.3 Involvement Of Social Actors

Social actors that could have a stake in the future of Venice have been identified. These included politicians, entrepreneurs, technicians and citizens, to whom scenarios were proposed during an appropriate social research process set up in several phases and comprising two types of methods: in-depth interviews and focus groups. For each setting a different scenario presentation was designed, tailored according to the audience. All types of non-scientific audiences very often view scenarios as predictions or forecasts, and therefore great care was taken in transmitting the right message of this type of scientific tool to the participants in interviews & groups, that is explorations into the future. Also, although the scenarios prepared for Venice were seen as very extreme they worked as triggers for discussions about sustainability issues involved in the future of Venice; including the sustainability of envisioned/desired futures have been explored for the particular case of Venice and also Europe – including trends, driving forces, actions and actors.

1.2.4 Integration With Higher Level Scenarios

Finally, the team has been involved in the integration of Venice scenarios (lower level) and European scenarios (higher level) developed by the ICIS team. The integration is based on the idea of finding nodes of compatibility between the two levels of scenarios; in practice the European scenarios were considered as the context for the unfolding of the others, that is to establish in which European context each of the Venice scenarios could actually develop. Participants in the social research process could see that although Venice is unique as a town (meaning unique characteristics both in terms of morphology and function) the processes that it underwent in the last decades and its future are metaphors of what the rest of European cities are already experiencing.
2. ENVISIONING THE FUTURE: 4 SCENARIOS FOR VENICE IN 2050

Scenarios for Venice were developed in two phases by a scenario expert (reports: Gallopín, 1999; Gallopín, 2000) in collaboration with the JRC team. In the remaining of this chapter some notions about scenarios are given followed by a summary of the first set of scenarios by the main issues addressed during the second phase of scenarios development, as well as the final scenarios themselves. With the exception for sections 2.2.2, 2.2.2.1 and 2.2.2.2 all the remaining sections of this chapter are part of the aforementioned reports.

2.1 ABOUT SCENARIOS

"Scenarios are not about predicting the future, rather they are about perceiving futures in the present (Peter Schwartz)."

Projections of trends in human affairs may be legitimate over the short-term, but they become unreliable as time horizons expand from months and years to decades and generations. Some studies of the future rely heavily on mathematical models. The aim is a desirable one of establishing a disciplined and internally consistent basis for understanding complex processes. But formal models also have significant limitations for representing complex human and environmental systems. Models can capture only those elements that are both reasonably well-understood and amenable to quantification. Fundamental uncertainty is introduced both by our limited understanding of human and ecological processes, and by the intrinsic indeterminism of complex dynamic systems. Moreover, social futures will depend on human choices which are yet to be made (Gallopín et al., 1997).

Scenario analysis offers a way to consider long-range futures in light of these uncertainties. Scenarios are not projections, forecasts or predictions. Rather, they are stories about the future with a logical plot and narrative governing the manner in which events unfold (Schwartz, 1991; Cole, 1981; Miles, 1981). A scenario is a possible course of events leading to a resulting state of the world (or image of the future). The image is rather like a picture or a snapshot of the future situation; the scenario includes the image plus the history of developments that led to it. Originally (Kahn & Wiener, 1967), it was defined as a hypothetical sequence of events constructed for the purpose of focusing attention on causal processes and decision points. The importance of considering scenarios as courses of events is that this directs attention to the unfolding of alternatives and to branching points at which human actions can significantly affect the future.
Scenario analysis challenges us to ponder critical issues and to explore the universe of possibilities for the future. Scenarios also clarify alternative world-views and values, challenge conventional thinking and encourage debate. The scenario approach can also provide a common framework for diverse stakeholders to map and address the critical concerns and identify alternatives, and a forum for discussion and debate.

Since necessarily scenarios embody the perspectives of their creators, either explicitly or implicitly, they are never value-free. They draw on both science – an understanding of historical patterns, current conditions and physical and social processes – and imagination, to conceive, articulate and evaluate a range of socio-ecological pathways (Raskin et al., 1996a). The balance between them may vary according to the purposes for which the scenarios are used, and the perspectives of their builders. Consequently, scenarios may be more analytical (concentrating on the unfolding of basic processes) or more impressionistic (introducing specific vivid events for illustration).

2.1.1 Scenarios: Methodological Elements

One important feature of the method of scenarios is that, while they can take into account quantitative insights from available data, numerical calculations, and mathematical models, scenarios give due weight, as well, to the scenario narrative and to key elements that are not quantifiable either in principle (e.g., cultural influences, behaviour and institutional responses to change) or in practice due to inadequacies in data or scientific theory. Thus, scenarios can provide a broader perspective than exercises, which are heavily model-based, while at the same time making use of various quantitative tools such as accounting frameworks (Raskin et al., 1996b) and mathematical simulation models (Hornung, 1992). Quantitative analysis can offer a degree of structure, discipline and rigor. Narrative can offer texture, richness and insight. The art is in the balance.

Box 2.1 ANATOMY OF SCENARIOS
- Current Situation
- Critical Dimensions
- Driving Forces
- Strategic Invariants (Predetermined Elements)
- Critical Uncertainties
- Plots (Logics of the Scenarios)
- Image of the Future
The development of scenarios generally begins with the characterization of the current situation. This includes the identification of a focal issue to be analyzed, or a critical decision to be made.

An important step is represented by the definition of the critical dimensions describing the scenario. Together, they define the multidimensional space within which scenarios can be mapped or constructed. Dimensions do not necessarily imply definite causal assumptions; rather, they are defined in terms of their relevance; they are descriptors of the most important attributes of the images of the future. Examples of possible dimensions are economic growth, social progress, environmental quality, conflict level, etc.

Dimensions are not chosen because of their scientific importance, but on the basis of their political or axiological value, and they are used to assess the desirability as well as the feasibility of scenarios.

Early in the process, we must identify the major driving forces, which represent the key factors, trends or processes, which influence the situation, focal issue, or decisions, and actually propel the system forward and determine the story's outcome. Some of these forces are invariant over all scenarios; that is, are to a large extent predetermined. Examples of predetermined elements are slow-changing phenomena (such as human population growth, building of physical infrastructure), processes already in the pipeline (the members of the teenage population of the next fifteen years—which are already born), inevitable collisions, and constrained situations.

Some of the driving forces may represent critical uncertainties the resolution of which fundamentally alter the course of events.

The current state, driving forces, strategic invariants, and critical uncertainties form the backbone of the scenarios. In addition, all scenarios unfold according to an internal logic, which links the elements into a coherent plot. The challenge here is identifying the plot that (1) best captures the dynamics of the situation and (2) communicates the point effectively.

The same set of driving forces might, of course, behave in a variety of different ways, according to different possible plots. Scenarios explore two or three of those alternatives, based on the plots (or combinations of plots), which are most worth considering.

The different building blocks are then put together on the form of a narrative, showing how would the world go from here to there.

The end point of the scenario is an image of the future situation resulting from the unfolding of the scenario. Long-range scenarios must recognize the role of deliberate human actions and choices in shaping the future. Human choice is influenced by cultural preferences, social visions and by psycho-social factors that are not well understood.
Finally, the construction and interpretation of a scenario will be influenced by the beliefs and theoretical assumptions of the analyst. The account of the mechanisms leading to alternative scenarios and judgment of the efficacy of alternative actions is guided by one's world view, although this is rarely made explicit. Seldom still is the use of contrasting world-views to show the variation in scenario interpretation (Miles, 1981). Though always difficult, critical reflection and explication of the philosophical predisposition informing a scenario is an essential aspect of scenario description and documentation.

Scenario exercises must organize the bewildering zoo of possible futures into some kind of taxonomy. A practical structure for organizing global scenarios must balance between two competing considerations. The goal of analytic rigor invites an expansive range of scenario variations for exploring the full richness and texture of future possibilities. Conversely, the desire to communicate findings to a wide audience of non-specialists dictates brevity and clarity, not to mention resource constraints.

### 2.1.2 Scenarios: Epistemological And Psychological Considerations

#### 2.1.2.1 Uses Of Scenarios

Scenarios are used to look into the future. To "look into" is not necessarily the same as "to predict", and most scenario analysts are very careful in emphasizing that scenarios are not predictions, but explorations of the future, and that even discussing which scenario is more probable is not very fruitful.

Scenarios are "what if..." stories, plausible courses of events leading to some resulting future image of the world.

There are a number of reasons indicating that the long-term future is unpredictable, practically or even inherently. These range from fundamental arguments questioning, on the basis of the existence of incomputable mathematics, the computability of physical reality (Davies, 1992), to the retrospective review of specific long-term forecasts, a majority of which proven to be off target (Schnaars, 1989), or, alternatively, major events were not anticipated (such as the collapse of the Soviet Union and most revolutions). A logical argument was provided by Popper (1957) on the basis that while it is inherently impossible to predict by rational or scientific methods the future scientific knowledge, the course of human history is strongly influenced by the growth of human knowledge, and therefore the future course of human history cannot be predicted. Or, as put by Michael (1989), one cannot predict a new theory or art form or new political and personal developments from what has gone before. Nor can one predict the consequences of predictions about the consequences. An additional and related argument follows from the fact that in human affairs, the future does not simply unfolds; it is also actively built by the different social actors within the constraints of the laws of nature.
And more important is that science has abandoned the idea of a clockwork universe; the future is not an extension of the past, a single predetermined trajectory; it is plural and indeterminate (Godet, 1987). How the future evolves is explained as much by the wilful goals and actions of human actors as by the influence of causal laws. Besides, an increasingly interconnected world will require resetting system and subsystem boundaries to whatever is appropriate for the welfare, and the coherence, of the emerging interdependencies. But resetting boundaries means shifts in the allocation of power and status, shifts sure to be resisted and challenged, adding to the indeterminateness (Michael, 1989). The future does not unfold; it is built within the constraints of causal processes. Therefore, the future of the global system is not predetermined and therefore not predictable. However, this does not mean that the future is only a voluntary construction of humans; physical and ecological processes co-determine limits of the possible and unexplored opportunities. On the other hand, in a non-egalitarian world, the future is not the same for everyone, to the extent that some social actors have a greater influence in determining the global course than others.

While an obvious desirable goal for long-term future studies would be to predict conditions in reasonable detail and to evaluate how outcomes depend on current policy choices. Unfortunately the uncertainty in any study looking more that five or ten years ahead is usually so great that the simple chain of prediction, policy change, and new prediction is very tenuous indeed (Kahn and Wiener, 1967).

Thus, the essential unpredictability of the complex social and ecological systems might suggest that it is worthless to engage in any forecasting or prospective analysis, at least in the long-term.

However, while most futurists warn against taking long-term studies as having real predictive value (Kahn and Wiener, 1967; Godet, 1987; Schwartz, 1991; Cole, 1981; Central Planning Bureau, 1994), other demonstrable benefits from the study of distant futures can be identified. Some of those are:

- To increase awareness. To draw attention to future possibilities (Burrows et al, 1991); to point out to possible desirable and undesirable (and perhaps even irreversible) changes that may result from established societal trends and future choices (Cole, 1981); to help policy-makers to imagine the various futures in order to prepare themselves (Central Planning Bureau, 1994); to help plan in a way that accommodates a large range of events (Kahn and Wiener, 1967).

- To help give direction. To stimulate and organize ongoing public debates about long-term prospects for the future (Central Planning Bureau, 1994); to broaden horizons and increase creativity (Kahn and Wiener, 1967).

By contrast, short- and medium-term (less than two and, for some, less than five years) of specific industrial and commercial systems amenable to a structured analytical approach can have some predictive value. Even so, it is recognised by its proponents that since the future is Anot completely predictable the value of the forecasting process is to produce a realistic view of the future establishing the foundation on which the most important ingredients (human judgement and intuition) are based (Levenbach and Cleary, 1984).
To perceive the world. To change our views of reality in order to help making better decisions about the future (Schwartz, 1991); to affect basic beliefs, assumptions, and emphases (Kahn and Wiener, 1967); to challenge our present world view or paradigm (Steenbergen, 1994).

To learn. To help people learn (Schwartz, 1991); to foster planning-as-learning, long-term studies as sources of specifiable uncertainties, for designing error-detecting and error-correcting societal processes (Michael, 1989).

To give perspective. To provide a guiding context within which consequences of alternative choices for the immediate future can be considered (Cole, 1981); a context in which to do shorter-term studies that can and do influence policy choices (Kahn and Wiener, 1967).

To anticipate. To anticipate some problems early enough for effective planning (although this is often unattainable – Kahn and Wiener, 1967); to provide early warning (Steenbergen, 1994).

To assess feasibility and help provide motivation. To explore the feasibility of desirable long-term goals, providing a basis for societal motivation and political will.

In short, while ontological and epistemological reasons make the long-term future unpredictable, human choice and the partial capacity of building of the future make the long-term studies worthwhile and necessary.

These serve, at least, to provide a wider perspective to planning and policy making, and to increase the breath of any considered specific scenario or sectoral study. At best, they serve to identify actions that can be taken at critical points or junctures in order to influence the future.

2.1.2.2 The Role Of The World View

In this context, a world view represents the set of beliefs and theoretical assumptions determining the perception of reality, the explanations provided, and the kind of actions proposed; different characterizations in the literature include conservative, reformist, and radical (Miles, 1981); fatalist, hierarchist, individualist, equalitarian (Thompson et al, 1990); technological optimist, technological sceptic (Arizpe, Constanza & Lutz, 1992), Northern, Southern; Cornucopian theories, Limits theories.

The world view embodies not only the value judgments about the desirability of alternative images of the future (goals and wishes), but also the causal inferences about how the different futures come to be.

In scenario analysis, it is important to make the world view as explicit as possible, and in some cases also to use alternative world views. This is because the role of the world views and ideologies assumes high significance given:

a) the very incomplete knowledge about functional relations and future surprises.
b) the lack of generally agreed theoretical frameworks to explain the functioning of human systems.

c) the fact that different social actors have different goals for the system.

All scenarios are influenced by the world view of their makers. The question then arises as to what extent is the scenario determined by the world view. This is not an easy question, but it is a researchable one. Probably the answer will be different in different cases, and it is possible to use experimental settings involving different groups of people defining scenarios on the base of the same set of data and information. This should permit to distinguish the influence of the world view from that of, say, the more or less logical or natural chain of inferences that can be drawn out of the initial information set, according to generally accepted causal mechanisms.

The basic world view behind the current Venetian scenarios, as far as the author can be aware of his own bias, involves in its most compact form a conviction that quality of life is a higher (more desirable) goal than income or material consumption, that environmental quality is both part of quality of life and a pre-requisite for sustainability, that the economy is not intrinsically incompatible with the environment, that the existing structure of power is often a relevant explanatory factor, that collective action is more effective than individual action, that planning is necessary but it should be adaptive, and that the future is built by human choice within the constrains of natural laws and mechanisms.

2.1.2.3 Assessment Of Scenarios

The primary criterion is whether the scenarios are useful for the purpose they were created. In some cases, it will be straightforward to apply this criterion (e.g. when the purpose of the scenarios was to give perspective, or to increase motivation); in other cases it will be not obvious.

A second criterion is that the scenarios be logically consistent (i.e. without internal logical contradictions).

As said before, scenarios should not be considered as predictions (even if some scenarios might turn out to actually describe a trajectory or situation that does materialize in the future) and therefore, testing them in terms of their predictive value would not be relevant (even if such a priori test were available).

Scenarios may also be evaluated in terms of their plausibility, but this may be misleading, as the most “plausible” scenarios might be the least interesting of all, and those that leave novelty out.
2.2 FIRST SET OF SCENARIOS

2.2.1 Venice 2050: Four Images

Four alternative images (or snapshots of the future) have been identified for Venice. They refer basically to the historical centre and the estuary, more than to the mainland area of Venice ("terraferma").

The scenarios were developed with the strategic aim of spanning the space of possible (and reasonable) futures. In other words, exploring alternative trajectories arising from the same set of initial driving forces, but having a differential development in each scenario. The images represent archetypes founded in a distillation of some of the major driving processes. In a very real sense, all scenarios are implied (or implicated?) in the present.

In contrast with more academic or professional oriented scenarios, the original set was expected to dramatize the alternatives, and highlight the fundamental differences.

Those images are intended, as plausible future states of Venice, states coming into being through the unfolding of causal and casual chains of events that will not be analysed in this report. Here it is sufficient to say that the local driving forces have been identified (on the basis of the available information) as those listed in Box 2.2 – see Appendix 2 for a detailed description of the drivers. Those drivers, in interaction with higher-scale (regional, national, global) forces, strongly influence the branching of Venice's historical trajectory into alternative futures.

The images are not specific predictions; rather, they symbolise possible classes of situations for Venice. Quite independently of the details, they dramatise the inner significance of the situation and allude to the kind of world within which they belong.

The four images for the year 2050 are summarised in the remaining of this section. Here, only a brief description of each scenario is presented.

While building the scenarios, contradictions of sustainability were used as uncertain elements about which the different scenarios will be valued for their consistency and plausibility.
Box 2.2: CURRENT (LOCAL) DRIVING FORCES

- Dominance or the tertiary sector in the economy (in the historical centre and the estuary)
  - tourism
  - commerce
  - public administration and politics
  - cultural activities

- Environmental degradation
  - pollution (water and air; acid corrosion)
  - high tides/subsiding
  - accident hazard

- Demographic decline (emigration from historical centre and low birth rate)

- High and democratic participation

- Influence of industrial zone of Marghera (now economically stagnated, with increasing unemployment; polluting industry; heavy ship traffic to Porto Marghera generates strong waves; increasing emphasis on tertiary activities)

- Increasing commuting distances and volumes

- Heavy motorboat traffic

- Insufficient water treatment. Water treatment plants only treat 62% of sewage (but domestic sewage from historical centre is not treated, generating water pollution and bad odours)

- History of Venice (the 'myth of Venice')
Rot and Decay

“Living conditions have deteriorated very much; air and water pollution have increased to levels that significantly affect human and ecosystem health. The fishing industry is closing down because of reduction and contamination of fish populations. The high tides are very frequent and dampness is overspread in most buildings.”

Venice Inc.

“Tourism has been growing steadily and it generates unprecedented profits; Venice is now one of the four most important tourist destinations in the world. Three large trans-national corporations dominate the economy and city life and provide most of the jobs. Venice became a “cultural park” and “museum city” for international tourism. (...)”

City-Machine

“Venice has become a tangible paradigm of the application of the engineer’s approach to complex hazards. Big barriers cover the entrances to the lagoon to protect the city against flooding. Additional barriers fill the horizon, giving Venice and the lagoon the aspect of a fortified city under siege. A continuous wall around the city system is under construction. (...)”

Sustainable Life

“The original morphology of the lagoon has been restored. Eco-management of high tides through restoration of the original hydraulic system and its behaviour is highly successful. Fisheries and aquatic life thrive. (...)”
2.2.2 Tuning Of The Scenarios

The first set of scenarios have been reviewed, tuned and validated, taking into account the social research with local stakeholders in order to incorporate local knowledge. The main changes regarding the contents of the scenarios are described below as well as the work carried out in terms of their presentation during the social research process.

2.2.2.1 Tuning Of Contents

1. The number of images was maintained referring principally to the historical centre and the estuary, rather than to the mainland area of Venice ("terraferma").

2. The final images are unchanged except for some details that were criticised during the first part of the social research process by the interviewees.

3. The scenarios trajectories were prepared and explained for their driving forces and values, interaction with higher-scale (regional, national, global) forces that strongly influence the branching of Venice's historical trajectory into alternative futures. The unfolding of causal and casual chains of events are presented as part of the scenario narrative and also summarised in the form of graphs – see section 2.3 of this report.

4. The names of the scenarios also changed in order not to influence the interviewee before he/she reads the scenarios. Therefore, the scenario called Rot and Decay is now called Gotham City, which is clearly suggestive of a decayed city, but also a legendary one. The scenario Sustainable Life became Cyberia, which does not imply immediately a sustainable life and therefore inevitably pushed the interviewee to choose it as the desirable one.

5. Revision of the main drivers determining the future of Venice.

2.2.2.2 Tuning The Plot

A great deal of work has been put into the presentation of the scenarios to the interviewees. See Chapter 4 for details. The initial impact of the scenarios when proposed to the interviewees does influence the attitude and response towards this type of modelling of the future.
As part of the refinement of the scenarios the JRC team has developed work on the communication aspects related to the presentation of the scenarios' narratives including the development of some multi-media material and enhancing the graphical message of the scenarios.

In Chapter 4 and Appendix 1 the scenarios are described and presented as they have been proposed in the second phase of the social research. For the in-depth interviews, “press articles” of the future were prepared. The Gotham City scenario consists of an article in Geographic Magazine, 2050; the Venice, Inc. and the City-Machine scenarios were set as articles of a well-known Italian newspaper ‘La Repubblica’ and the Cyberia scenario is conceived as an article-advert in an ‘alternative tourism’ magazine. For the focus groups, two different types of multi-media presentations have been developed, although following an identical plot, i.e. an adventure in parallel worlds in 2050. This is because the age of the participants was very much different (2 groups of people more than 60 years old and two groups of people 10 to 15 years old – see Chapter 3 for details).

2.3 TUNED SCENARIOS

The results of the testing phase of the first set of scenarios was communicated to the scenario expert (Gallopin, 2000) who developed a new set of scenarios to be used in the second phase of the social research process. In the remaining of this section we provide the final format of the scenarios and visions for the Venice case study.

Gotham City

Dominant local drivers:

- Environmental degradation (pollution, high tides/subsiding, and accident hazard).
- Demographic decline.
- Influence of the industrial zone of Marghera.
- Increasing commuting distances and volumes.
- Myth of Venice (translated into inaction)
The unfolding of the scenario

This scenario begins with a situation in which the “Myth of Venice” translates in a sense of omnipotence, a feeling that, somehow, problems of pollution and ship and motorboat traffic will always be solved. Therefore, no strong actions to control these processes are taken. As a result, environmental degradation and traffic increase so much that tourism starts to decline.

Most of the financial resources available for restoration of the city are misused of dissipated through corruption. Policy-makers are either ineffective or part of the problem.

With the decline of tourism, and in the face of a passive attitude by the local population, the economy increasingly depends on industrial production from the islands and particularly from mainland centres.

Eventually, industrial production accelerates; this increases the level of employment.

Also, because of large commuting time, many residents abandon the centre for the mainland. However, because of the decline in tourism, employment in the centre goes down. High industrial growth (combined with the passivity of the population) leads to increasing environmental degradation, and a consequent diminishing of tourism (both in volume and in quality). The future is locked in industry as the major economic activity.

The greatly increased environmental degradation results in a generalized damage to the buildings and to the cultural heritage.

The historical centre, where employment has been diminishing, environmental conditions worsened, and public health is at a low level, is gradually taken over by jobless and outcast people (some drifting from other cities), as the living and working conditions keeps deteriorating. Eventually, a state of social anomie installs itself in the local society of the historical centre.

The chart in figure 2.1 depicts the unfolding of the scenario in terms of causal sequences starting from the initial drivers (top). The arrows indicate that the factor(s) in the originally box determine, influence or lead to the situation in the receiving box. Time unfolds from the top to the bottom of the chart.

Image by 2050

Living conditions have deteriorated very much; air and water pollution have increased to levels that significantly affect human and ecosystem health. The fishing industry is closing down because of contamination of fish populations. The high tides are very frequent and dampness is overspread in most buildings.

Emigration from the historical centre and the lagoon have reached unprecedented levels and the historical centre is now populated mainly by the jobless and the outcast.

Tourist attractiveness has diminished; the flow of tourists has trickled down to a small fraction of late 20th century values, and industry (mostly in the mainland) is the leading sector of the economy.
Figure 2.1 Unfolding of the scenario Gotham City.
In an effort to salvage part of Venice's cultural heritage, sculptures and paintings are moved to the mainland. A "New Venice" is founded in a vacated area in the mainland, copying the architectural styles of the historical centre, while the buildings in the original Venice are being corroded by acidic air and prolonged immersion underwater.

City-Machine

**Dominant local drivers:**

- Dominance of the tertiary sector in the economy
- Environmental degradation (particularly the high tides/subsiding and accident hazard)
- Demographic decline (stopped)

**The unfolding of the scenario**

Due to the global importance of Venice for international tourism and as part of the world's cultural heritage (and the risks posed by the sinking of Venice and the high tides), increasing amounts of national and international financial support become available.

After a couple of unfortunate high tide-related incidents which caused the death of one famous Italian senator and some foreign VIPs, policy-makers at the regional and national level decided to resuscitate a large engineering project aimed to protect the historical centre from the floods and from further subsidizing. Huge submersible gates barring the lagoon and blocking the floods during the high tides, is built. These huge works generates additional environmental impacts due to their interference with the hydrological regime of the lagoon, and new risks are generated, particularly when higher than normal tides bypass some of the gates and overflow over prosperous residential areas.

As the "Engineering Works Economy" involving colossal expenditures on works, shoring up sea walls, digging channels and building defences, has become one of the dominant element of the Venetian economy, the preferred response lies in the design and implementation of new engineering solutions, generating more and more complex works. This provides a high level of employment, but it also has a negative input on tourism.

While the small floods are normally contained, the risk of higher than normal floods overwhelming the defences increases with time, demanding more and more controls. Eventually a threshold of complexity is exceeded, and the cost of dismantling and re-designing becomes so high that the city becomes forever committed to a command and control strategy.
Figure 2.2 Unfolding of the scenario City Machine
In an effort to salvage part of Venice's cultural heritage, sculptures and paintings are moved to the mainland. As tourism dwindles, industry (combining the classical industrial activities of the mainland and those of the large engineering corporations) increasingly dominates the economy, generating a new wave of environmental impacts (even when mitigating measures are taken). These impacts combine with the ultra-complexity of the engineering systems to result in the need for still increasing controls and a general loss of resilience towards new, unexpected events. By this time, as in the story of Alice with the Red Queen, solutions need to be generated at an ever faster pace to keep in the same place.

**Figure 2.2** shows the basic chains of cause and effect for this scenario.

*Image by 2050*

Venice has become a tangible paradigm of the application of the engineer approach to complex hazards. Big barriers cover the entrances to the lagoon to protect the city against flooding. Additional barriers cover the horizon, giving Venice and the lagoon the aspect of a fortified city under siege. A continuous wall around the city system is under construction.

Environmental impact of the works (including water flowing around the barriers, ecological impacts of the sinking of huge amounts of cement in the water, and ecological impacts of the changed hydrological regime) have triggered new engineering solutions, each solving specific problems but generating additional ones. Bigger, more complex, and more expensive systems are being built. Powerful underwater propellers are in place, implemented to redesign and maintain the circulation of water in the lagoon.

Small floods have been effectively stopped, but this generated a false sense of security. The first large flood that the barriers failed to prevent had catastrophic consequences, taking a toll of lives and damages to the buildings and the city's cultural heritage. While efficient early warning systems for high tides were in place, the elapsed time between the unexpected failure of the barriers and the flood proved to be too short for effective action.

The system became more and more dependent on human control and the economic and environmental cost of potential failure is now very high. As a consequence, rigid operational controls have been established, and more people are employed in maintenance activities.

The visual attraction of the city has been greatly reduced because of the visual impact of the ubiquitous engineering works. Initially, the works themselves became a tourist attraction. However, this was short-lived, and in the longer-term tourists were turned off in a much larger proportion. The power of Venice as a magnet for tourism has largely vanished.

As the economy of Venice dwindled, it became much more onerous to pay for the barriers and the maintenance of the water works.
The whole city slowly became a huge accident waiting to happen, and activities are now rigidly regimented. Life in the city becomes more and more like living inside a gigantic engineering work. For a large fraction of the population, life has now a purpose: to keep the machine running.

**Venice, Inc.**

**Dominant local drivers:**
- Dominance of the tertiary sector in the economy
  (particularly tourism and cultural activities)
- Environmental degradation (halted)
- Demographic decline

**The unfolding of the scenario**

In this scenario, tourism exhibits continuous growth and becomes, by far, the dominant sector of the economy. Initially, the level of environmental degradation and heavy boat traffic affects negatively the activity, but as tourism-generated wealth increases, many of the firms involved in the activity realize it will be profitable to make direct investments in environmental and traffic improvement. These investments, combined with the public ones, manage to halt most environmental and architectural degradation. The environment is even improved in some cases, particularly regarding health and aesthetic conditions.

Employment by the tourist sector increases very fast, and, because of the limited size of the local population, begins attracting labour from outside Venice (including specialized foreign workers). This, eventually, reinforces the commuting problems that begin to become critical. Some expensive solutions (such as an underground metro system, encased under the floor of the lagoon—overcoming serious engineering problems due to the geology of the sediments—) are implemented and contribute to mitigate the problem.

The business of tourism exhibits a process of concentration, through mergers and take-overs, and it becomes the dominant socio-economic actor with a very powerful lobbying influence in the decisions.

The local and historical cultural values become diluted and digested by the new settings; new "traditions", highly colourful and specially designed to attract tourists, are fabricated.

See chart of figure 2.3 for a summary of the unfolding of events for this scenario.

**Image by 2050**

Tourism has been growing steadily and it now generates unprecedented profits; Venice has become one of the four most important tourist destinations of the world.
Three large Italian-born transnational corporations dominate the economy and city life and provide most of the jobs. Venice became a "cultural park" and "museum city" for international tourism. New cultural events are implemented to attract more tourism. The Carnival takes place four times a year now. People are dressed in period costumes. Life has become highly ritualised.

Pollution has been efficiently controlled, through the investment of part of the huge profits from the tourism/cultural industry. The high tides become an additional tourist attraction. New ways of using the floods as tourist shows are invented and implemented.

The local resident population shrinks during the night time to people working in the restaurants, hotels, and essential services, and some security staff. Venetians are undetectable among the masses of tourists. In daytime, commercial and cultural activities peak and demand more operators.

A major part of daily life in the city is now a parody (for tourists) of "la Serenissima". The city is a setting in which the whole local population (commuting daily from the mainland) performs a gigantic operatic performance.

Venice is not a "normal" city anymore, but an enormous theatrical stage.

Cyberia

Dominant local drivers:

- Dominance of the tertiary sector in the economy (particularly tourism, cultural activities and information technologies).
- Environmental degradation (reversed)
- High and democratic participation
- History of Venice (the 'myth of Venice')

The unfolding of the scenario

Faced with the increasing problems of the city, and gaining strength from the myth of Venice (with its conviction that Venetians can always cope successfully with any problem), the local citizens join forces with the policy makers and start a series of participatory debates about the future of the city.

A widely shared preference is the desire to further consolidate the economy around the tertiary sector; on the other hand, the importance of the quality of life in the city is given the highest priority.

In a first phase, tourism is stimulated but carefully regulated, while other cultural activities are supported. Pollution controls are put in place, making the city more attractive to its inhabitants and to environmentally-conscious tourism.

Part of the cost of pollution abatement and cultural development is transferred to the tourist sector, resulting
Figure 2.3 Unfolding of the scenario Venice Inc.
in increasing prices of tourist services. This helps to cover the costs of environmental restoration and at the same time reduces the volume of tourist throughput, without a significant impact on earnings from tourism. A deliberate effort to restore and revitalize traditional Venetian activities such as artisan fishing and handicraft is made.

Adaptive environmental management approaches are increasingly adopted, combining small engineering works with the application of ecological principles at the level of the whole Venetian urban and natural ecosystems.

Partially financed by the profits of the tourist sector, but increasingly self-propelling, a widespread growth of information technologies occurs.

This is increasingly combined with Venetian unique historical and cultural comparative advantages, and with the creative capacities of the Venetians, resulting in the explosion of a new industry: cultural informatics, developing cultural and educational software, games and instruction kits based on access to the cultural treasures of the city through sophisticated virtual reality packages. Some of the VR services allow very realistic “virtual visits” to the city, dematerialising a sizable portion of the demand from tourism.

A new cyber-economy is born, providing employment, reducing commuting problems (because many people work at home joined by telecommunication links), and increasing income.

The improved living and environmental conditions contribute to the cessation of the demographic decline. The exercise of participation and networking results in a sense of community that restores ancient human values; this social experiment gives inspiration to other cities in different parts of the world.

The chart of figure 2.4 shows the logics of the unfolding of events for this scenario.

Image by 2050

The morphology of the lagoon has been stabilised. Eco-management of high tides through restoration of the original hydraulic system and its behaviour is highly successful. Fisheries and aquatic life thrive.

The application of rigorous pollution control and ecological principles has resulted in a marked improvement of the heath and integrity of the aquatic ecosystem.

People have learned to live with the high tides and the foundations and cellars have been treated to minimize damages due to immersion. The base level of the San Marco piazza and of some small strategic areas has been raised.

Tourism flow is regulated through licensing of hotels and restaurants, taking into account the city carrying capacity for the activity, and the conditions required to improve the quality of life of the local population. But tourism is not the only, nor even the overwhelming, source of income and jobs. tSilicon valley” specialized in the use of information technologies for historical heritage-based cultural activities. The city trades now its cultural treasures in highly sophisticated virtual reality packages, much appreciated at the national and international levels, and Venice is flourishing as a world-class learning center for “cultural informatics".
Figure 2.4 Unfolding of the scenario Gotham City.
3. PLANNING THE SOCIAL RESEARCH

The typical focus of activities to increase public participation in decision and policy making has been on informing the public either through increasing public understanding of science or increasing access to information (Irwin, 1995). However there has been an evolution through regulation that encourages more active and collaborative involvement (De Marchi, Funtowicz & Guimarães Pereira, 2001), actually reframing such activity as a way of obtaining quality and effectiveness on decision and policy making processes. In the VISIONS project the involvement of local actors aimed at integrating local knowledge into the sustainable development debate of Venice and Europe. The process has started by identifying, constructing and framing the issue of sustainable development based on scientific expertise.

3.1 SOCIAL ACTORS IN VENICE

*Venice is not 'owned' by Venetians in many senses...*

Social actors (or stakeholders) in Venice are not necessarily Venetians and therefore the introduction of social discourse into the process has to be done through social research methods that account for this specificity, namely in-depth interviews and group-based social research methods. The idea is also one of promoting a social learning process whereby the scenarios are the basis for discussion using the contradictions involved in the concept of sustainability and information technology supporting these spaces of interaction.

A methodology to promote social participation in processes of innovation and sustainable development of towns.

The selection of the key actors to be interviewed has taken into consideration the methodology of the “European Awareness Scenario Workshops” (EASW), an initiative co-ordinated by the DG XIII/D of the European Commission.

The Italian Institute IDIS (Istituto per la Diffusione e la Valorizzazione della Cultura Scientifica) has been given the task to promote and diffuse the EASW methodology.

Clearly, this methodology has been adapted to fit the aims of the present project. More precisely, it has been used to classify the relevant actors to be interviewed individually.

Following the methodology, the actors have been divided into four groups: policy makers, technicians, citizens and entrepreneurs – see Box 3.1. see next page
Box 3.1: CLASSIFICATION OF SOCIAL ACTORS

Policy makers: public bodies involved in town planning and management including economic, environmental, and social aspects (i.e. City administration, Assessorato all' Ambiente; Assessorato al Turismo; Mayor, health services, etc.)

Technicians: private and public companies involved in the lagoon recovery and, in general, all the agencies involved in the management of environmental issues of Venice (foundations; Agencies for Agenda 21; etc.)

Citizens: citizens' groups and associations for a sustainable Venice; neighbourhood committees (consigli di quartiere) local NGO's, etc.

Entrepreneurs: Multinational corporations; worldwide travel agencies; local associations representing different sectors of production (e.g. fisheries, industry) and services (banks, insurance, tourism, commerce...).
3.2 SOCIAL RESEARCH PLANNING

3.2.1 In-depth Interviews

Two sets of in-depth interviews (in total 25 interviews) with Venice social actors started in 1999 and finished in 2000, aimed at addressing issues of sustainable development and the tuning of the scenarios set for Venice. This type of approach was chosen to allow thorough examination of the scenarios and prospects for sustainable development for the city of Venice by the actors earlier identified.

3.2.1.1 The Interviewees

The interviewees were chosen according to the scheme outlined above. The identification of the stakeholders was done either through prior knowledge about the importance of the person (i.e. referred to in the press; their position in some relevant institution; through direct contact with institutions or associations or after the first interviews asking the interviewees to suggest further contacts).

Each interviewee received an invitation letter containing information about the initiative, the VISIONS project itself and type of commitment required, as well as the request for consent to audio recording.

In-depth interview

This type of qualitative social research consists of a face-to-face interview with an individual, allowing in-depth examination of specific issues. The interview may follow a questionnaire that consists of a plan of the research topics that should be addressed during the interview, including specific questions. In any case there always has to be a research protocol that specifies the themes to be addressed during the interview. One of the key points of this type of interview is the role of the interviewer which should permit the interviewee to respond to the topics of the interview in a free manner, she/he should guide the interviewee in order to have those topics covered (Pitrone, 1984). Such an interview usually lasts one to one and half-hours.

See also: McLaughlin (1992); Denzin & Lincoln (1994); Schwartz & Jacobs (1987).

Observation: A proper identification of the interviewees should have followed a more formal procedure, for instance an institutional analysis. Although the interviewees are known relevant people, who have certainly competent opinions, power relationships cannot be established from the results of those interviews.

3.2.1.2 Organisation Of The Interview

The interviews were held usually at the interviewee’s work place, so that there would be no excuses or expenses for busy people attending the interview. With one exception, the interviews were done on an individual basis. Technical material was a tape recorder to record the whole interview. An Italian sociologist – i.e. a native Italian speaker – acquainted with Venice problematiques conducted the interviews.
3.2.1.3 Agenda Of The Interview

The interviews lasted from one to one and half-hours. The time was deemed sufficient to allow for warming up, presentation of the scenarios and discussion following the questionnaire.

As pointed out before, the social research through in-depth interviews was run in two phases during this project. In the first phase a series of 12 interviews were carried out from March-June 1999, aimed at tuning the first set of scenarios. During the second series, carried out during autumn 2000, 13 people were interviewed using the newly tuned scenarios.

The interviews' structure was planned slightly differently for the two rounds because the scenario materials supplied to the interviewees were quite different. In the second round, which corresponded to the completion of the in-depth interviews with Venice stakeholders, the 'tuned' scenarios were sent to the interviewees prior to the interview. This of course changed the structure of the interview, namely regarding the time allocated for the presentation of scenarios, leaving more time for discussions.

1. Warming up welcome, which included brief personal introductions and some explanations about the VISIONS project, including its context, network and purpose, as well as the structure and objectives of the interview. N.B. Most of this had been included in the aforementioned letter sent in advance to the interviewee.
2. In the first round, brief presentation and reading of a schematic summary of the scenarios narrative – see Appendix 1.
3. Discussion using the questionnaire as a guide – see next sections.

Observation: In the first set of interviews the scenarios were presented during the meeting by means of a small amount of material: whilst in the second phase the scenarios were sent to the interviewees prior to the interview because they were more extensive and it was considered that during the time allocated for the interview it was impossible for the interviewee to become properly acquainted with the scenarios' contents. This actually resulted in much richer sessions with the interviewees giving more interesting answers than in the first phase, at the cost of less spontaneity compared with the first phase.

The information resulting from these interviews has been incorporated into the process of tuning and refining of the scenarios.

VISIONS - Adventures into the future
Materials provided

As pointed out before the materials provided in the first round were quite different from those provided in the second round. Whereas in the first round a very schematic description of the final image and driving forces was provided, in the second round, the whole narratives, including the trajectory of the scenarios were provided. The latter were provided in the form of “press articles” from the year 2050, so in the form of news or background articles. In Chapter 4, the structure of these materials is described in detail.

Questionnaire

The design of the questionnaire was one of the crucial tasks to ensure that the exploration of the scenarios in relation to the research objectives is attained. The questionnaire tried to respond to the themes of previously established research protocol:

- Collect opinions about the scenarios proposed
- Ask the interviewees to describe their vision of the future – what could be sustainable development in Venice?
- Driving forces, actions and agents
- Links with European situation

The questionnaire that guided the interviews was also tuned for the second round because some questions in the first round were not producing the types of answers that we as analysts had a priori imagined (not in relation to opinions but to contents). The questionnaire addressed the scenarios in a direct way, initiating a discussion about the future and what is needed to achieve a desirable future in terms of agents and actions. Also the questionnaires addressed the driving forces, so that those could be confirmed or not, and asked specific questions in relation to management of the most outstanding problematiques of Venice. When needed questions were posed in a slightly different way according to the actors interviewed. Box 3.2 shows the questionnaire used during the first set of interviews.

The newer questionnaire (see Box 3.3) used during the second round of in-depth interviews, emphasised the contradictions of sustainability and explored the metaphor of European futures embedded in the scenarios for Venice in greater detail. As in the first questionnaire, scenarios were explored for the particular case of Venice and also Europe as far as sustainability issues of envisioned futures are concerned – including trends, driving forces, actions and actors.
QUESTIONS TO SOCIAL ACTORS IN VENICE ABOUT 4 VISIONS OF VENICE FOR 2050.

Box 3.2: THE INTERVIEW GUIDE – 1st ROUND OF INTERVIEWS

1. I would like you to comment each of the scenarios.
2. Which of the scenarios (or the combination) is the most likely according to you? Why?
3. Which of the scenarios (or the combination) is the most desirable according to you? Why?
4. What are the prevalent tendencies that according to you are pushing towards the scenario that you think is most probable?
5. What actions do you think should be carried out to achieve the desirable scenario?
6. Who would be the agents able to accomplish the scenario that you think is most desirable?
7. Through which actions?
8. What are the actors that, according to you, make difficult the realisation of the scenario you reckon as desirable?
9. Through which actions?
10. What actions should be carried out to pass from the likely scenario to the desirable one?
11. Do you think that local agents are empowered to manage the future of Venice? If not, who has that power?
12. You know that Venice is threatened by natural phenomena: ‘acqua alta’, erosion, etc. What do you think should be done to manage those phenomena without creating additional impacts?
13. How do you picture Venice demographic situation in the future?
14. How are the city’s traditions recognised?
15. I would like you to give me a metaphor, an image, a sentence about the future of Venice...

Box 3.3: THE INTERVIEW GUIDE – 2nd ROUND OF IN-DEPTH INTERVIEWS

1. Which of the scenarios (or the combination) is the most likely according to you? Why?
2. Which of the scenarios (or the combination) is the most desirable according to you? Why?
3. What actions do you think should be carried out to achieve the desirable scenario?
4. What actions should be carried out to pass from the likely scenario to the desirable one? – Explore here the contradictions of sustainability with examples:
   1. The Mose vs. cultural identity – trade-off between culture and technology
   2. Humility vs. arrogance – focused actions vs. individualistic actions
   3. Sustainable Venice vs. Exploited Venice – inter and intra-generational equity and so long term strategy vs. day to day decisions (mordi e fugget)
   4. Economic growth vs. limits of growth
   5. Venice museum vs. Venice for Venetians – reconciliation between individual interests and collective ones: Venice as a live city for those who live it and Archetype Venice for the international community
   6. Top-down decisions vs. bottom-up actions – Conflicts between international and national institutions and local civil society
   7. Evolution vs. stand-by – Venice, XXI century vs. La Serenissima – Globalisation vs. localism – Venice untouchable vs. Globalisation
   8. Selective tourism vs. mass tourism – alternative paths vs. compulsive circuits.
5. Who are the agents that would accomplish or otherwise make difficult the realization of the scenario that you think is most desirable? Do you think that local agents are empowered to manage the future of Venice? If not, who has that power?
6. What are the values that underlie the accomplishment of the preferable scenario according to you?
7. Drivers: how do you picture Venice’s demographic situation in the future? (b) How are the city’s traditions recognised? (c) What should be done to manage threatening phenomena such as ‘acqua alta’, erosion, etc.?
8. Ageing of the population, pollution, loss of cultural identity, non-transparent democratic processes, what are we talking about, Venice or... also Europe?
9. If we consider Venice as a small representation of Europe’s “state of affairs”, could it be viewed as a small “observatory” of Futures for Europe?
10. Would you like to give me a metaphor, an image, a sentence about the future of Venice...
Outcome

The outcome of these interviews is in the form of audio tapes that have been transcribed and used extensively in this report – see Chapter 5.

Observation: although in the majority of the cases, respondents were quite collaborative and enthusiastic about the discussion, in some cases the answers were quite poor and disrespectful of the work of the researchers. This probably had to do with the informal way with which the scenarios have been presented that in some cases might have been considered not serious enough.
3.2.2 Focus Groups

The second part of the social research used also focus groups. The team had chosen to have groups of people who have radically different relations with the 'future' and 'past': older and younger generations. In that way, different aspects of proposed Venice 'futures' could be addressed. In a sense, the interviewees of the in-depth interviews represent the generations in-between. Four focus groups were run: two groups, whose participants were aged over 60, were held in Mestre and Venice historical centre and two groups whose participants were aged between 10 and 14 were held in Venice historical centre.

3.2.2.1 Recruitment And Composition Of Focus Groups

Groups with older participants

Recruitment of older participants was done with the help of the Università della Terza Età in Venice (University of the 3rd Age). Indeed, all participants were somehow involved with this university. We chose two groups of 10 people, one with people residing in the mainland, i.e. Mestre - group 1 - and one with people living in the Venice historical centre - group 2.

The criteria of recruitment given to our collaborators have been the following:

- First of all, the age, which was set at more than 60 years old;
- Sex: evenly distributed according to gender;
- Previous (or current) occupation: balanced between working and non-working, covering both private and public sectors, including different sectors of activity.

The participants were contacted by the two organisers/recruiters of the groups and subsequently received a letter from the responsible of the project, containing information about the type of commitment, including the nature of the task, the duration of the session and requiring agreement to being video-recorded. In this way conditions for fully understanding the commitment have been created. The participants agreeing with the conditions of the meeting duly signed these letters. This is very important, in terms of protecting: both participants - from possible improper use or unwanted use of materials derived from the sessions – and researchers - in case of complaints or after-thoughts (e.g. regarding video-taping).

During the session participants were also asked to give written authorisation for the publication of materials related to the session (including extracts of the video recording) in the VISIONS website at the JRC.

http://alba.jrc.it/visions
Groups with younger participants

The choice of the schools was provided by the Provvedoria Studi Venezia based on our criteria of **location**, **age** and **interest of the project in the context of the school program**. Hence, two classes were chosen from two different schools, a “2nd media” from Secondary School Morosini (13-14 years old children) – **group 3** – and a “5th elementare” from the Elementary School Gallina (10 years old children) – **group 4**. Both schools are in the historical centre of Venice.

The schoolteachers were first contacted by the Provvedoria itself and then a meeting was held with the JRC team in order to check the place where each session was going to take place, to clarify the nature of the commitment, the type of tasks imagined for the session, etc.; eventually the session was organised together with the teachers. Subsequently, a letter similar to the one sent to the participants of the older groups was sent to the Director of the school, containing information about the type of commitment, including the nature of the task, the duration of the session and required agreement to being video-recorded and publication of the materials produced by the participants in the VISIONS website at the JRC.

http://alba.jrc.it/visions

The director of the Elementary School Gallina did not authorise video recording and therefore we had to audiotape the session – which resulted in much poorer material, difficult to follow and to analyse given the background noise (already anticipated given the age of the participants). Therefore, group 4 was not videotaped, the images provided in the CD that accompanies this report and the website are photos taken during the session.

3.2.2.2 Organisation Of The Sessions

Groups with older participants

The sessions were held in the headquarters of the University in Mestre and in the Venice historical centre, according to the residence of the participants. Although, the rooms were chosen and provided by the organisers, we required that these should be darkened so that projections from the computer could be made. Group 1 was organised around a table whilst group 2 was organised in a crescent around the facilitators. Technical material included a video camera to record the whole session, a computer projector and a portable computer to present the scenarios. Flipcharts and pens were available to record main conclusions and thoughts.

A sociologist and a scientist acquainted with scenario building moderated the sessions.
Groups with younger participants

The sessions were held at each school in the pupils' classrooms (which could be darkened), in order to minimise a change of atmosphere which could influence the pupils' behaviour and discomfort with the presence of the facilitators. The pupils were seated around the facilitators: group 3 kept their desks whereas group 4 chose to have only chairs. Technical material included a video camera, a tape recorder, a digital photo camera, a computer projector, a portable computer and loudspeakers. There were also flipcharts hanging from the wall.

Two sociologists, two scientists acquainted with scenario building and the schoolteachers themselves, moderated the sessions.

The classes were composed of approximately 25 pupils and therefore although not all facilitators were always involved in the debates, supervision of the equipment was required and occasionally pupils had to be followed closely – especially when they were on their own performing the activity suggested during the session, that is to imagine a future for their city. So, the number of people guiding the session was adequate.

Observation: Group dynamics was facilitated in all cases by the fact that all participants in each group knew each other. Therefore, relationships were already established and so was group dynamics. The atmosphere was quite collaborative in the majority of the groups. This allowed more spontaneity from the participants.

3.2.3 Agenda Of The Focus Groups Sessions

3.2.3.1 Focus Groups With Older Participants

Each group of 10 people met once during approximately two and half-hours without a break in order to accomplish the tasks assigned for the session.

The sessions were carried out at the end of the afternoon to allow participants to attend it without disturbing their daytime activities. Two and half-hours were sufficient to allow for warming up, presentation of the scenarios, discussion and final debriefing.
Structure and outline of the sessions

The sessions were planned as follows:

1. Warming up welcome, which included brief personal introductions by participants and moderators.
2. Introduction to the VISIONS project, including its context, network and purpose, as well as the objectives of the meeting.
3. Discussion about the present situation in Venice.
4. Presentation of the scenarios by means of multi-media shows – see Appendix 1.
5. Discussion – see Box 3.4 for objectives – framed by the same issues addressed during the in-depth interviews.
6. Debriefing and reporting

Observation: In the ULYSSES project (De Marchi et al., 1998) there has been much concern about setting the experience in a research context because of its very nature: the participants adopting the experience as a lesson or a course. In this case, people responded as if we were in a situation of changing policy for real where their opinions could be heard and considered. This is probably because of the nature of the subject; after all we were talking about the future of their city... Also, in some senses we were the outsiders. They are the ones that have the knowledge (and in some sense authority) to talk about how things were done in the past years and having a 'better' intuition of how things could develop. This created an atmosphere of great comfort.

Materials provided

The scenarios were presented through a PowerPoint® show as a story inspired in Calvino's Invisible Cities, where Marco Polo tells Kublai Kan about several cities. The structure of the presentation was the following – see Chapter 4 and Appendix 1 for details:

- Introduction about scenarios, including definitions, morphology and description of scenario building activity;
- Presentation of each scenario which included the following sequence:
  - The final image
  - Driving forces
  - Justification with tangible elements for building such scenario.
The materials provided to the participants included a summary of the driving forces, and final image for each of the scenarios illustrated with a suggestive picture. This was done to allow consultation during the discussion subsequent to the presentation of the scenarios.

All materials were provided in Italian.

Rationale of the discussion

Before introducing the Venice scenarios and discuss problems and paths to achieve a desirable sustainable future, the participants were asked to go back in time 30 – 40 years and give an idea about how Venice has evolved and arrived in the present situation. Namely, to talk about the actors of the changes during the past 40 years and explore the sense of responsibility of the citizens themselves for the present developments. Also participants were asked to outline, according to them, the main problematiques associated with living in the historical centre, management of the city, etc. Group 3 (composed of Mestre residents) had some members who were born in Venice historical centre but had to leave it earlier in their lives for economical reasons; this has triggered discussions around demographic and economic problems of the city. The four scenarios were then presented by means of PowerPoint® shows, initiating by the concept of scenario itself.

**Observation:** Although it was repeatedly stated that those scenarios and final images were imaginary situations for 2050, not predictions and not ideal situations, the final impression was that the majority of the participants have interpreted them as such.

The discussion proceeded addressing the scenarios, and the possibilities that one of these futures or combinations could happen in 2050, exploring the reasons why they could or could not happen. ‘What should we do now to arrive at a desirable future?’ or ‘What is the role of the citizens in that process?’ or yet ‘Who is responsible to act?’… Were questions that emerged during the discussion together with proposals for action – see chapter 5. Contradictions of sustainability have emerged during the discussions, namely what trade-offs between culture and technology or need for reconciliation between individual interests and collective ones, conflict between democracy/diversity and action/purpose, namely regarding the way decisions are made in the city; globalisation, etc… Finally, the participants were asked to imagine a future for Venice and describe what it would entail to achieve it. The debriefing would be done in the last 10 minutes and participants would be invited to write something (which happened only in group 1).

Outcome

The main outcome of the sessions is in the form of statements made during the discussions. As pointed out earlier, only group 1 produced some written output.

**Observation:** Despite repeated encouragement and availability of means to do so, this task was not really welcome by participants. The main reason would be that it was not clearly stated as an aim of the meeting.
3.2.3.2 Focus Groups With Younger Participants

Each group consisting of entire classes of approximately 25 pupils, with ages ranging from 10 to 14 years old met once during approximately three hours with a 20 minute break in order to accomplish the tasks assigned for the session.

The sessions were carried out during normal class times, in the morning. Three hours were sufficient to allow for warming up, presentation of the scenarios, discussion and final activities by the children.

The sessions were moderated together with the teachers of these classes, a sociologist and a scientist acquainted with scenario building.

Observation: the morning was chosen following schoolteachers' advice in relation to pupils' concentration which is generally higher in the first hours of the morning; also three hours with a break is the toleration threshold of pupils of that age.

Structure and outline of the sessions

The sessions were planned as follows:

1. Warming up welcome, which included brief personal presentations by participants and moderators.
2. Introduction to the VISIONS project, including its context, network and purpose, as well as the objectives of the meeting.
3. Discussion about the Venice of today.
4. Presentation of the scenarios by means of multi-media shows – see Chapter 4, Appendix 1 and CD-ROM.
5. Discussion – see Box 3.5 for objectives.
6. Reporting by means of writing, graphics, etc.

Box 3.5: OBJECTIVES PURSUED IN THIS PHASE OF THE SOCIAL RESEARCH THROUGH FOCUS GROUPS WITH CITIZENS (AGE<15)
- To explore how the future is perceived.
- To explore the new generations' perspectives about the future of Venice and how they imagine it - if there is any correspondence to any of the futures presented...
- To explore questions what if...
- To explore the sense of agency of children on determining the futures and suggestions for action (by whom?)

Materials provided

The scenarios were presented through a multi-media animation as a story of two travellers between parallel worlds, Marco Polo and Kublai Kan who were searching for Venice as Marco Polo knew it, i.e. Venice of 2000. The structure of each of the movies is the following:

- Visit to the city in 2050, corresponding to the final image of it;
- Explanation about the reasons why the city became that way, embedding driving forces and scenario trajectories.

All materials were provided in Italian.
Rationale of the discussion

Before the discussion about the scenarios, the participants were asked to describe the particular things in the city which a tourist cannot see when visiting Venice: ‘Imagine you have a friend visiting, what would you tell him that is not in the tourist guides?’ In this way the participants could point out the good things of living in a city like Venice and the unpleasant ones from a younger generation point of view. Introduction to the concept of scenario was done.

Only three of the scenarios were presented: Gotham City, City Machine and Cyberia. This is because of time constraints and suspicion that too much material could influence the quality of the discussion, triggering confusion. The scenarios were presented by means of the multi-media shows, mentioned earlier. The discussion proceeded addressing the scenarios themselves. The schoolteachers would first make sure that the pupils followed the plot and enquired about the main ideas after the presentation of each scenario. Discussion was about the possibilities that one of these futures or combinations could happen in 2050, exploring the pupils’ sense of place in these futures. ‘What should we do now to arrive at a desirable future?’ or ‘Who should take care of the actions to be done?’... Were questions that emerged during the discussion. Contradictions of sustainability came out of the discussions, namely what trade-offs between culture and technology or need for reconciliation between individual interests and collective ones, inter-generational conflict, etc... After the break, the participants were asked to imagine a future for Venice, this task remaining the most collaborative of all.

Observation: Because elementary school children were quite young, the schoolteachers have done a preparatory session that included explanations about the experience they were going to make, discussion about today’s Venice, how they see it and what would they do to modify it. The session was indeed very spontaneous and so in a sense the outcome of the final session with us had been somehow rehearsed.

Outcome

The materials produced, apart from statements during the discussions, were drawings, texts and also digital materials (sounds and images) for an animation of what could be the future of the city in the form of three different stories – see CD-ROM.

The pupils of group 4 have produced great materials that have been incorporated in the CD-ROM attached to this report and showed in Appendix 3. Although group 3 did not finish their drawings started during the session, a video-clip with the main ideas for these drawings has been produced and provided in the CD-ROM that accompanies this report.

Observations: Group 4 continued the development of materials resulting from this experience after the session was finished under the supervision of the schoolteachers.
4. INTERFACES: TELLING THE VISIONS STORIES

4.1 PROCESS: DESIGN OF THE SOCIETY – SCIENCE INTERFACE

The debates about the future and about sustainability are bounded by uncertainty and ignorance. The inherent dimension of unpredictability of foresight studies makes science just one among several possible frameworks of analysis. Choices, decisions and actions to be made within this milieu must allow other types of knowledge. They must be handled in spaces where all who are affecting and who are affected by a particular problematique may share in its formulation and in its resolution. That is why this project embeds strongly new ingredients of good governance, such as social enquiry and interfaces between science and society. This project is not about 'public understanding of science', but rather about engagement of the public in debates where scientific information has a role.

In this new process the discussion of the scientific facts is subsidiary to the community’s response to the challenges of tackling complex problematiques. The provision of scientific information should stimulate the introduction of other sorts of knowledge to enrich the debate. For that, the science that is communicated must be timely and comprehensible.

Hence, the mode in which the scenarios are introduced in the social process, is a fundamental task and research topic for this project. Neither marketing solutions nor science education approaches are appropriate, because the objective is not to engage people in the product of the research but rather making them part of the process. The new ICT is thus seen, in this situation, to facilitate the creation of a virtual context for common ground, facilitating the assemblage of concerted actions, decisions and choices.

In this project the conditions of introducing scientific tools into a social discourse are explored in the context of initiating a debate with major actors and citizens on sustainability issues and the futures of a region. Therefore, the research results of this investigation concern the design of a process that interfaces scientific products and processes with the society.

Interfaces to Scientific Issues
The basic assumption is that scientific issues such as the generation of images of the future have to be placed into a context that efficiently attaches the people to the elements that scientists and non-scientists might want to explore together. At the same time – because we are dealing with coherent imaginary revelations of the future – we have to provide the tangible elements that originated the stories we are telling, the ways in which the storylines were produced, etc. That can be achieved through metaphors, immersions into imaginary virtual worlds, but basically through the explorations of spaces where both the story plot and the reasoning to achieve it are explicitly embedded into the scenario’s interface.
In practice the process consists of the identification in each case of elements that make scenarios a valuable instrument for carrying out a useful debate about sustainable development for each of the categories of social actors. This implies the design of interfaces tailored for each audience: interfaces for meaning, interfaces that promote familiarity with the instrument so that the audience can adopt it. This entails a process from design to implementation of:

- The visualisation of the issues (using for instance ICT),
- Mechanisms to access further information,
- An effective organisation of the debates by means of focused questions (both on the subject being addressed and for the people being interviewed).

Thus, this process of creating interfaces between scientific issues and society is the process that enables effective and meaningful participation of the civil society in public issues, such as the debate on sustainable development.

**Basic Principles...**

The presentation of the scenarios to the stakeholders and citizens within the social research process of this project varied across social research phases and also according to the audience. Indeed, the different settings of social research have lead to different developments as far as the scenarios presentations are concerned. This is not only because of the very different types of social research methods deployed in this project – individual interviews and focus groups – but also because the audiences of these research settings are different. Whilst for the individual interviews a non-interactive product was prepared, for the group settings a multi-media tool has been developed that explains the unfolding of the scenarios in an appealing and interactive way and makes the connections with the European level ones.

The basic principle that assists our developments, especially the design of ICT based products is the feature of progressive disclosure of information. This should allow different types of audiences to gradually explore information especially in terms of contents and specialisation and interface or presentation format (for instance, presenting a multimedia video explaining the scenarios would not exclude access to the scenario text files or to a model with which some figures estimation has been done – see the CD-ROM that accompanies this report). However, the key issues addressed in the scenarios are at always uncovered whatever the interface. That is a matter of communication congruency.

By adopting a progressive disclosure of information approach, the pitfalls of changes in semantics contents is also avoided, since the full story is provided – at least the one that is accessible by those who carry out the research.
Hence, the first issue addressed when designing the presentations of the scenarios is the issue of the audience. The audiences dealt with in this project were different from what can be called an expert audience (in scenarios, that is) or from the scientific community. That brings the issue of interpretation and language. What is meaningful for a scientific audience is not necessarily understandable or even recognised for a non-scientific one. So, when designing an interface to a scientific issue, we are talking about interfaces to meaning, jargon-free or rather, jargon-explained. The message shall be as clear as possible, not blurred by banal or baroque elements, alien concepts to lay audiences being explained in a tangible form, maybe using analogies or metaphors. ICT may provide an interactive framework – not just contemplative – through which many ‘tangible’ languages (words, images, sound, clips, etc.) help unfolding meanings of any narrative because of the visualisation potential and of the access to virtual worlds – many times representations or metaphors of concepts. That is, by re-presenting them, by exploring and querying, by making understandable relationships of issues involved in a problemaétique, etc. Hence, by gathering and creating knowledge...

Apart from the issue related to expertise, which already poses a great deal of specifications in the design of the scenarios presentation, it has also been considered the issue of age of the participants, i.e. what in terms of communication suits or attracts one audience may not suit or attract another. Children are most of the time more attracted to multi-media movies than to reading, whereas policy makers have time for summarised ‘concentrated’ information. Reading or interactive multi-media tools provide the means of going back if necessary, whereas shows or live presentations may help with the ‘effort’ and attention needed to read – also because of the potentially enhanced graphic message. Interactive multi-media presentations provide also the means of progressively exploring information if it is structured in a multi-layer fashion. Presentations by a moderator using multi-media materials provide the means of interaction and of going back in issues.

The adopted social research methodology clearly determines the design of interface. The group setting is more adequate for shows, oral presentations or interactive usage of a computer multi-media presentation, whereas individual interviews may need less supporting material if an oral presentation is done or reading may be more adequate.

Observation: it must be stressed that the choice of one or other way of representing/presenting the scientific issue depends at least on the three factors mentioned earlier and also on the issue itself and the resources of the researchers. Therefore, what is told here is not a panacea...

Therefore the ‘stories’ to be told in the different contexts entail different aspects of communication, the ultimate aim being the effective provision of the necessary information in the time allocated for the process.
Observation: In another project, the ULYSSES project (see De Marchi et al., 1998) we have outlined some suggestions for communicating scientific issues within participatory contexts. These referred primarily to computer models, yet they can be adapted to other types of scientific information, including scenarios:

- **Justifications**: provide sources of information in the sense that people do not have the impression of information generated by a black box; uncover the process through which the information has been generated; provide information that is credible enough not to divert people from the focus of the discussion. \(\rightarrow\) People need to trust.

- **Resonance**: provide tangible elements so that people can transpose global concerns to their own, implying a necessary personal & regional geographical dimension. \(\rightarrow\) People need congruency.

- **Modesty**: address problems in accessing to information, such as data gathering, uncertainty of model simulations and predictions, modelling complex issues, ignorance, etc... \(\rightarrow\) People have knowledge.

- **Creativity & Interactivity**: have fun dealing with these issues without missing the point: have a playful, interactive exchange of information between the technology & the user.

- **Added-value**: have novelty elements. \(\rightarrow\) People have knowledge.
4.2 TELLING THE STORIES TO IN-DEPTH INTERVIEWS

4.2.1 Assumptions

At first it was assumed that the majority of the interviewees would not be familiar with scenarios and scenario building, that they were busy people not willing to waste time. However, after the first set of interviews it was observed that, although these characteristics were confirmed, the material developed based on these assumptions was insufficient generating an aggressive feeling towards the scenarios, distrust in the whole project and so, changing the moderation style and diverting the interview from the research objectives, putting a great deal of effort on the moderator to restore trust and also to re-frame the issues (who was not an expert on scenario building, although trained to be able to make any necessary clarifications). This was mostly the case when interviewees were not familiar with this type of tool.

Therefore, the initial assumptions were complemented with others, such as that the audience needs a greater deal of information about the scenarios to avoid its reluctance towards them. A greater amount of information influences the plan of the interview and the ways in which the information itself is supplied – see next section.

Observation: the very fact that the scenarios were built by non-Venetians and moreover non-Italian scientists has generated a suspicious and distrustful attitude in many of the interviewees.

4.2.2 From Bullet Points To “Press Articles”

In the first phase, the scenarios were presented to the stakeholders during the first 15 minutes of the in-depth interviews using single sheets of paper containing main drivers and only the final image described in bullet-point fashion, so, all in a very schematic way. Therefore the material provided was very little and the interviewee had access to it only during the interview. As pointed out earlier, this proved to be insufficient, deterring the interviewee from the discussion because of the many doubts about the scenario storyline, the justifications for it, etc.

Therefore in the second phase of the social research great care was put on the ways information was supplied to the interviewee. A set of “press articles” were imagined, which contained not only the final image of the scenario itself but also justifications and tangible elements that allowed the interviewee to follow the scenario better.
In practice the process consists of the identification in each case of elements that make scenarios a valuable tool. These were sent in advance to the interviewee so that he/she could be better acquainted with the scenario contents and give more focused responses during the interview.

The basic structure of the "press articles", with slight variations for each of the scenarios, consists of:

**Box 4.1 BASIC ANATOMY OF A PRESENTATION OF A SCENARIO TO AN INTERVIEWEE**

- A *flash image*: a summary of the final image of the scenario or an imagined event that triggers the new.
- The image narrated and illustrated for the year 2050 in Venice.
- Where possible, integration of the Venice scenarios with the European ones developed by ICIS, Univ. of Maastricht was carried out. This was done by illustrating 'what is going on in Europe' with elements from the European scenarios that are mostly consistent with the Venice scenarios – see Chapter 6.
- Incorporation of *flash-backs* of real recent news (from Italian newspapers and others) to provide the congruency element that makes the link between the imagined futures and current reality and tendencies.
- Description of the scenario trajectory and presentation of the graph that links current drivers to successive events. There is not a precise chronology of events just a causal relation between the events that lead to the final image.

In **Appendix 1** the scenarios in **Italian** as they have been proposed in the second phase of in-depth interviews are presented.

The *Gotham City* scenario consists of an article in Geographic Magazine, 2050, supplied in the magazine's actual paper format; it starts with a headline – the ultimate action of this scenario in Venice, that of transference of the city's cultural heritage to the mainland – followed by the scenario trajectory, description of the final decadent image for various aspects and a schematic representation of the evolution between 2000 and 2050 from the initial drivers. An actual recent (1999) article about a copy of Venice in the State of Nevada was also incorporated as a flash-back in time to provide a tangible link of what could be seen as an impossible trajectory. Links to European scenarios are done within boxes – to be seen as further information.

The *Venice, Inc.* and the *City-Machine* scenarios were set as articles of a well-known Italian newspaper ‘La Repubblica’. Therefore, they both start by some ‘shocking news’ adapted from the scenario description.
From the event, the final image of the city is described followed by the explanation of the trajectory, outlining also the main drivers and with the aid of a scheme, the evolution from 2000 through 2050 is presented. In City-Machine some recent news (1999) about the barriers project – Mose – is presented as a flashback to link the main idea of the scenario to a real option. In Venice Inc. no news is incorporated since the scenario accentuates the current situation. As before, links to European scenarios are done within boxes – to be seen as further information.

The Cyberia scenario is conceived as an article-advert of an ‘alternative tourism’ magazine, so starting with the final image of Venice in 2050, various aspects of the city are described in a non-aggressive marketing style. Then the trajectory is described and the evolution from local driving forces in 2000 is illustrated with a scheme similar to that of the other scenarios.

All “press articles” have been illustrated with images, adverts, etc. suggestive of each of the scenarios key ideas.

**Why work in interfaces?**

A great deal of work was put on the presentation of the scenarios to interviewees and group participants. As explained earlier, the initial impact of the scenarios when proposed to the interviewees does influence the attitude and response towards this type of modelling of the future. As part of the refinement of the scenarios the JRC team has done a great deal of work on the communication aspects related to the introduction of the scenarios’ narratives in the context of participatory processes including the development of some multi-media material and enhancing the graphical message of the scenarios.

Interfaces between scientific tools and non-scientific audiences are the means by which scientific tools become actual supporting tools to governance processes where scientific issues are important.

**Finding:** Scenarios as scientific tools informing participatory processes must feature an interface that is trustful to the scenarios’ storylines, makes the building process explicit for its assumptions, uncertainties and ignorance and eventually creates spaces for awareness and discussion. Scenario interfaces should be considered as a feature of the scenario morphology because that ensures its usefulness within debates about the future.

> **Quality as fitness for purpose.**
4.3. TELLING THE STORIES TO CITIZENS

4.3.1 Assumptions

It was assumed that the majority of the participants to the focus groups would not be familiar with scenarios and scenario building; yet because of the previous experience with in-depth interviews the materials available for the sessions were extensive, yet supplied in layers, applying the principle mentioned earlier of progressive disclosure of information. In practice, further information was available if required.

Also, because of the group setting it was thought that oral presentations together with multi-media shows would be adequate — that is, non-interactive computer shows. For the older participants' groups this solution was adopted because of the unfamiliarity of the participants with the computers that could compromise the plan of such a short session, delaying or diverting the discussion, whereas the large number of participants in the younger groups and the impossibility of following their interaction closely with the computer has been the reason to adopt such an approach. Also, it was assumed that due to the difference of age the same materials could not be used in all four groups. So, the age played a fundamental role in the decision about the show style: to the older groups, we have decided to carry out an oral presentation supported by a formal show, in PowerPoint® style, whereas for the younger groups we have decided to carry out a multi-media show in the form of video clip animations supported by a short oral presentation.

4.3.2 Development of Multi-Media Materials

Two types of products have been implemented for the focus groups. PowerPoint® presentations using multi-media materials were prepared for the groups with older people, whilst a web based multi-media interactive software product was prepared for the children's groups. The latter has been designed to work either in a show mode or in an interactive mode. Also, the idea has been one of producing a portable tool that could later be accessed through the WWW — indeed, a short version is available from the JRC VISIONS web site.

4.3.2.1 Groups of citizens more than 60 years old

We are in 2050... The intrepid traveller Marco Polo and Kublai Kan are seated in a beautiful room at the Kan's palace...
Marco Polo tells Kublai Kan about several cities he has visited...
– Tonight I'll tell you about four cities... Vinegia, Venusia, Venetia, Veniexia... – says Marco Polo...
This was the metaphor to introduce the narratives of the scenarios to the groups.
The materials prepared consisted of a PowerPoint® presentation — see stills of this presentation in Appendix 1 and the PowerPoint® show in the CD-ROM. The structure for each scenario included the following:

**Box 4.2 BASIC ANATOMY OF A PRESENTATION OF A SCENARIO IN THE OLDER GROUPS**

**Layer 1**
- The final image of the 2050 scenario illustrated and told as a story by Marco Polo to the Kan.
- Description of the driving forces that could lead to such a scenario.
- Incorporation of flash-backs of real recent news (from Italian newspapers, official video clips, and others) to provide the congruency element that makes the link between the imagined futures and current reality and tendencies.

**Layer 2 (material showed if required)**
- Description of the scenario trajectory and presentation of the graph that links current drivers to successive events.
- Integration of the Venice scenarios with the European ones developed by the Univ. of Maastricht by choosing elements from the European scenarios that are mostly consistent with the Venice ones.

4.3.2.2 Groups of citizens less than 14 years old

...In another moment, Kublai Kan wishes to see Venice with his own eyes... so, he asks Marco Polo to take him to that magnificent city through the parallel-world box!

- I have another wish... take me to this wonderful city, Venice! — says the Kan.
- Hum... Well, OK! Touch this box, the box of parallel-worlds, and close your eyes... concentrate!

And so they slide into parallel visions of the city...

This was the metaphor used to tell the stories to the groups of children.
The screenplay is inspired in Italo Calvino's book 'Invisible Cities' where Marco Polo tells Kublai Kan about the cities he has been visiting and also on the TV series 'The Sliders' (FOX TV, USA) which chronicles the adventures of four "travellers" moving between parallel realities searching for the world they left:

"Kublai Kan and Marco Polo slide into four parallel worlds, that is four different Venices in the year 2050. MP helps KK exploring the city, explaining how it happen that the city became like that..."

Four interactive multi-media movies have been developed, each corresponding to one of the scenarios. Actually, the four stories, four episodes of an adventure through parallel Venice virtual realities of the year 2050 have been conceived as cartoons. Almost all graphical and soundtrack materials have been produced in-house in our ArtLAB. The software has been implemented using Macromedia® multi-media environments, Director® and Flash®.

Each story consists of the following elements:

Box 4.3 BASIC ANATOMY OF A PRESENTATION OF A SCENARIO IN THE YOUNGER GROUPS

Layer 1 – Dialogue between Marco Polo and Kublai Kan
- Walk through the city, pointing out the main elements of the scenario's final image in 2050.
- Explanations about the trajectory and the driving forces that might have caused such evolution.
- Links with European ‘events’ taken from the European scenarios developed by ICIS, Univ. of Maastricht, that could backup the trajectory of the scenario: metaphoric integration of both levels of scenarios.

Layer 2 – Material accessed in the interactive mode
- Description of the scenario trajectory and presentation of the graph that links current drivers to successive events.
- Explanation of the drivers
- Integration of the Venice scenarios with the European ones developed by the Univ. of Maastricht by choosing elements from the European scenarios that are mostly consistent with the Venice ones.
4.4 FROM ARTICLES TO CARTOONS TO WEB...

The latter step of our implementations consisted of developing a web site where all processes and products of VISIONS are made available; hence a possible research itinerary for those who conduct social research based foresight studies. The rationale of this web site is to enable any visitor to trace the research plan responding to the objectives of the project. It includes all materials developed including scenarios and multimedia materials and reports. It follows the principle of progressive disclosure of information.

The richness of such a WWW site is the possibility for any audience to uncover the research process through which information from different actors is collected and put together to initiate a debate on sustainability.

Different technologies have been employed here as a means of creating interfaces between scientific issues and non-scientific audiences, i.e. creating spaces for information communication & exchange, awareness, discovery and debate and even development of agency.

The key issue about these interfaces is not the technology they deploy – albeit important – but the essential aspect of making them useful within social contexts to respond to the challenge of public involvements and integration of local knowledge in decision and policy making processes. Quality assurance in such processes requires the integration of scientific, technical and economic knowledge and social actors’ perspectives into constructive dialogue with each other, in order to search for common terrain and explore socially robust choices.

New ICT and especially the INTERNET is the infrastructure of what is called the information society. Not only because it encompasses the labyrinth of knowledge and ideas to be discovered but also because it enables a virtual space of negotiations, collaborations, self-reflections, etc. so, means of approximating the many sectors of the civil society. The involvement of the public in decision situations using information and communication technology is yet embryonic because emergent new aspects related to technical, communication, societal, ethical, etc. issues have to be considered. ICT may be used in non-mediated participatory experiences or else in collaborative environments. In (De Marchi, Funtowicz & Guimarães Pereira, 2001).
5. MAIN FINDINGS: WHAT HAS BEEN SAID AND BEYOND...

5.1. VISIONS FOR VENICE: A PROCESS AND A PRODUCT

5.1.1 Development of Scenarios – A Quality Assurance Process

It is now widely recognised that sustainable development strategies cannot be put forward without the involvement of those affected by and affecting decision and policy issues. Thus, the process of building scenarios sought to involve not only scientific expertise but also representatives of actors involved in shaping the future of Venice. This has been done through a social research process implemented during the project. The development of scenarios in this case can be viewed as a practical implementation of a process of quality assurance by extended peer review. It ensures that knowledge other than scientific can be shared and integrated into the scenario building exercise.

Let us summarise here such process:

(1) At the beginning of the scenario building process a scenario expert was asked to produce four alternative images for Venice. They referred basically to the historical centre and the estuary, more than to the mainland area of Venice ("terraferma"). Local driving forces were identified (on the basis of the available information), which, in interaction with higher-scale (regional, national, global) forces, influenced the branching of Venice’s historical trajectory into alternative futures.

(2) The scenarios were subsequently presented to social actors in Venice through in-depth interviews and focus groups. The moderator used a basic questionnaire – see Chapter 3, requesting opinions such as assessment of each scenario, their relative likelihood and desirability, required actions, major obstacles, and other issues related to the future of Venice, namely the driving forces.

(3) The collection of suggestions and comments gave rise to the second phase of the development of the scenarios, i.e. they were tuned according to the social process. Further development of the scenarios included the description of the causal and causal chain upon which each scenario has been created, some changes in the narratives, as well as renaming and communication aspects.

(4) The second phase of social research would then take place leading to minor adjustments of the scenarios. From this rehearsed process several aspects emerged, for instance the importance of the narrative voice.

VISIONS - Adventures into the future
It became evident that if the scenarios would have been imagined and developed by other narrative voices – for instance in a non-academic world – not only the final images would have been different but also the scenarios would address different concerns or focus on particular aspects of the evolution of the city. Also, from this process it was evident that the time-scale is an important issue and that for less trained minds to imagine life in 50 years time is a difficult notion.

5.1.2 Development of Scenarios – A Product

The final product is a series of tuned scenarios (see Chapter 2) that enable the discussion of issues of sustainability as far as the future problematic is concerned. The four different images and scenarios embed different values. Venice Inc. could be seen as the business as usual scenario, whilst City Machine could be seen as a scenario driven by technocratic values, and the scenario Cyberia could be seen as driven by human values. Besides, the scenario Gotham City could be classified as a Barbarisation according to the terminology of Gallop et al. (1997).

The scenarios were developed with the strategic aim of spanning the space of possible (and reasonable) futures. In other words, exploring alternative trajectories arising from the same set of initial driving forces, but having a differential development in each scenario. The images represent archetypes founded in a distillation of some of the major driving processes. In a very real sense, all scenarios are implied (or implicated?) in the present.

Throughout the process of building scenarios, it has been observed that scenarios as tools to be integrated into sustainable development debates should not be viewed as the sole cycle of going from initial drivers to a final vision (the morphology of the scenarios developed by the JRC team have been described in Chapter 2 based in Gallop (2000)). The format of the introduction and communication of scenarios (a scientific input) to non-scientific forums has to be tailored for the participants in these forums. Hence, as pointed out before, the product is not just the scenario narrative but also the formats in which they have been presented. This conclusion results from the VISIONS project work, emphasising the need for purposeful design of new interfaces between science and the society.

5.1.3 Main Findings

In this section details for each operational objective that assisted the research carried out during this project are given, including illustrations for each of the observations.

1. To develop scenarios for Venice in order to explore issues of sustainability, agency and policy inherent to the future problematic.
Scenarios allowed the discussion of sustainability issues, actors that stimulate or block the development of the desirable future and also promoted discussions about policy and action needed to attain the desirable scenario. In many cases the interviewees would give precise suggestions for managing certain parts of the city, to revitalise them or give them a function that is interesting for the city and its inhabitants (e.g. for the Arsenale). The following observations represent some of the relevant issues that would emerge during the discussions.

Interviewees would often point out that Venice is a difficult town in which to live when compared with the modern standards of other cities. Yet, one of the most prominent comments that came out from the interviews and discussions is the need to find solutions for Venice that are compatible with Venice specificity and compatible with Venice rhythms because Venice is different from the other cities, it has its own rhythms. Time has another dimension. This is illustrated by the following comments:

"Vuoi vivere a Venezia, vuoi avere la qualità della vita che Venezia ti può dare, devi fare un lavoro che sia in grado di dare un valore aggiunto, per cui viene pagato di più e quindi puoi permetterti la casa bella a Venezia e non devi vivere in uno scantinato puzzolente, maleodorante. (...) Di nuovo l'Arsenale, mi pare, sia la metafora di queste cose, fuori da questa cosa c'è un cantiere navale, quale ogni 2 anni fallisce (...) perché fa un lavoro che non è consono a Venezia, cioè fa un lavoro che si può fare altrove a costi inferiori. Allora invece Dante mi dice: no, non è quello il problema. Il problema è c'è l'arsenale, ci sono i bacini di carenaggio (...). Devi inventarti un lavoro che si possa fare all'arsenale, che la gente voglia che venga fatta l'arsenale."

"Tornando allo scenario cibernetico, perché esso sia realizzabile, bisogna tornare al discorso degli incentivi, che non devono diventare una forma assistenziale, ma permettere alle imprese di trovare a Venezia una sede efficace per le loro attività. C'è sicuramente il problema delle infrastrutture però le idee che circolano ultimamente, una per tutte la costruzione della metropolitana dalla terraferma, mi sembrano spesso e volentieri delle semplici boutades. Come sempre è una questione d'equilibrio, lo posso anche essere d'accordo con la progettazione e messa in atto d'interventi anche rilevanti, però devo essere fatti tenendo conto che la città è unica al mondo e quindi non possono essere interventi pensati per una città come Milano, ad esempio, ma bisogna tenere conto della storia e della realtà veneziana."

"Do you want to live in Venice, do you want to have the quality of life that Venice may offer, then you should work in a way that gives added value to the city, so you are better paid and you can have a nice house in Venice so that you don't have to live in a smelly basement (...). The Arsenale is the metaphor of these things, a shipyard that every two years goes bankrupt (...) because it performs a job that is not compatible with Venice, ie it can be done elsewhere at lower costs. Now, Dante says the problem is something else. The problem is that the Arsenale exists (...) therefore, one should invent an activity that can be done at the Arsenale, that people want to see done at the Arsenale." Entrepreneur (1). 2nd round of in-depth interviews.

"Going back to the scenario Cyberia, to be feasible, you have to go back to the theme of incentives, which shouldn't however become an economic assistance, but rather allow the companies to find a place in Venice for their activities. Yes, there is a problem of infrastructures, but the ideas that we listen to nowadays (like the construction of the underground) are nonsense. There is always an issue of balance, I could even agree with the project and execution of relevant interventions in Venice, yet they should be done taking into account that the city is unique and so those interventions should not be thought of as if they were for example for Milan; they have to take into account the Venetian history and reality." Politician (1). 2nd round of in-depth interviews.
"Venezia bisogna accettarla con i suoi tempi. Io dico: Venezia ha i suoi tempi. Se noi cambiamo i tempi di Venezia non abbiamo più Venezia, abbiamo un'altra cosa che non sarà né un'isola, sarà un ibrido che non risponde a delle esigenze di funzionalità di una città agile a rispondere alle esigenze dei cittadini, e non abbiamo la città storica. Il problema è che per rispettare i tempi di venia ci vuole un sacco di soldi."

"Manca la proposta dolce, manca la proposta che risolve i problemi di Venezia in forma non traumatica."

"Venice has to be accepted with its own rhythms. I say: Venice has its own rhythms. If we change the rhythms of Venice, we don't have Venice anymore; we have something else that is not even a great city. It is a hybrid that cannot fulfill citizens' modern requests and we don't have the historical city. The problem is that in order to respect Venice's rhythms, we need a lot of money." Participant (1) to focus group 1.

"We miss the soft proposal, we miss the proposal that solves the problems of Venice in non-traumatic ways." Participant (4) to focus group 1.

However, some state that by providing the city with some modern infrastructures, activities other than those connected with tourism could be introduced; as people say the majority of the activities (other than tourism) carried out in Venice are done in Venice because of its image, and not because they are compatible with Venice. So, for instance, as in the scenario Cyberia, information and communication technologies are seen as a plausible basis for a renovated economical/productive sector so are seen as desirable trends.

"Venezia oltre ad essere una città che sperimenta questo tipo di attività [informatica], a Venezia non può fare niente, o fai arte, perché Venezia è una città artistica, o fai qualcosa che non abbia nessun tipo di impatto con la morfologia del territorio. Questo potrebbe esserci anche, è un'attività che si presta bene ad essere svolta in questa città. (..) Bisogna che vengano fatte tutte quelle operazioni infrastrutturali, creazione delle condizioni per poter mettere in atto questo tipo di tecnologia."

"Venice, either experiments with this type of activity [information technologies] or you can do nothing... or you do arts, because Venice is an artistic city or you do something that doesn't have an impact on the territory morphology. This type of activity [informatics] is appropriate for this city. (...) It is necessary to build some infrastructures, so to create the conditions to deploy this type of technology." Citizen (1) 2nd round of in-depth interviews.

The demographic problem of the city, a crucial factor that drives the dynamics of developments in the city, is seen as a result of lack of infrastructures and of no incentives to create economic conditions to allow young couples to stay in Venice. Not only the existing houses need major restoration and often major restructuring but also the prices are very high. Therefore the tendency is to leave Venice with the effect that houses are bought by people that have the money but are not from Venice.
They are often buying the property as a second house – this implies that at the end of the day there are very few residents in Venice. Moreover, this problematic has been going on for more than 40 years (see comment by participant (2) to focus group 1, who is more than 65 years old). This problematic is illustrated through the following comments:

"Tutte le persone della mia generazione e anche forze di quella prima, quando ci sono sposate, quando hanno dovuto mettere su casa, famiglia, non si poteva! Non esisteva la possibilità di rimanere a Venezia. Non esistevano case quando esistevano erano messe male, senza bagno o allora carissime."

"[S]e si continua ad emarginare la popolazione residente ci sarà sempre di più un invecchiamento della popolazione e, contemporaneamente, i nuovi cittadini di Venezia, saranno degli stranieri, ricchi ed anziani. Ci vuole sangue nuovo, o meglio, basterebbe rendere le condizioni maggiormente vivibili per gli abitanti che già ci sono. Bisognerebbe rendere i prezzi delle abitazioni maggiormente accessibili, garantire strutture alle famiglie con bambini e in generale creare delle condizioni che rendano Venezia una città vivibile da tutti e non solo dai turisti."

"L'invecchiamento della popolazione è un trend difficilmente rimediabile, a meno di creare delle condizioni per cui, come per le imprese, sia conveniente per le coppie giovani vivere in centro storico invece che sulla terraferma. Quindi, maggiore presenza di negozi per la vita quotidiana, il calo dei prezzi degli affitti e del costo delle case e la presenza di strutture create e messe a disposizione dei cittadini, sto parlando di palestre... verde attrezzato per i bambini, scuole raggiungibili facilmente, e così via."

"Credo che ci sarà un peggioramento demografico, peggioramento io intendo come qualità della residenza, perché non è data solo, (...) dalla casa, ma è data dall'insieme di servizi che riferiscono all'abitare."

"La città si degrada spaventosamente però non c'è la contropartita dello sviluppo reale!"

"All the people from my generation and also from the previous one found that when we got married and wanted to have a house and a family, we couldn't do it in Venice! There was no possibility of staying in Venice. There were no houses and those that existed were in a terrible condition, without a bathroom or extremely expensive" Participant (2) Focus Group 1.

"If you continue to marginalise the population that resides in Venice, it will get older and older and at the same time the new citizens of Venice will be rich and elderly foreigners. We need young blood, or better still it would be enough to promote better living conditions for those who are here already. It is necessary to reduce the housing prices, to guarantee structures for families with children and in general to create conditions that make Venice a liveable city for all and not only for the tourists." Entrepreneur (4) 2nd round of in-depth interviews.

"The ageing population is an inevitable trend, difficult to remedy, unless conditions are created, as for companies, to make life in the historical centre convenient for young couples. Such as shops for everyday purchases, cheaper rents, cheaper housing and the creation of infrastructures for the citizens: I am talking about gymnasio, green areas for the children, accessible schools, etc." Citizen (2) 2nd round of in-depth interviews.

"I believe demographic conditions will get worse. By this I mean not only housing but also the services that relate to living". Entrepreneur (2). 2nd round of in-depth interviews.

"The city is in frightening decadence, yet there is no compensation in terms of real development!" Participant (3) Focus Group 2.
Despite all the problems, those that live in Venice recognise it as a place of an exceptional quality of life, even if sometimes it entails a change of lifestyle. This is actually one of the characteristics of the town that must be accepted by those who live there, i.e. a unique lifestyle that implies different rhythms and different timings (see earlier comments)...

"Volevo rimanere qua, però è stato un vero sacrificio personale, (...) però perché c’era una vita assolutamente privilegiata, come qualità della vita a Venezia, è assolutamente privilegiata."

"I wanted to stay here but it was really painful, life is absolutely privileged... in terms of quality of life being in Venice is absolutely a privilege". Entrepreneur (4). 2nd round in-depth interviews.

Yet, policies are needed to return the city to its inhabitants by rethinking some of the current social/economic panorama.

"[S]e [Venezia] vuole raggiungere i livelli europei, i livelli mondiali, deve effettivamente riacquisire una capacità di soddisfare le esigenze complessive degli abitanti della città in primo luogo, riuscendo a limitare le, dicono, le estremizzazioni che si hanno, che si manifestano nella città, come predominio degli ambulanti, predominio del turismo mordi e fuggi e cose di questo genere."

"If [Venice] wants to reach European levels/world levels, it should first of all re-acquire the ability to satisfy the needs of its inhabitants; at the same time control the excesses that exist in the city, such as the predominance of excessive tourism, street sellers and so on." Politician (2). 2nd round in-depth interviews.

Moreover, a participant to a focus group pointed out that the problems of Venice should be solved in a context wider than the local or regional one.

Traditions are felt by the people who live in Venice, even if some of them were reinforced or even reinvented in order to guarantee a larger tourist season. Yet, some interviewees pointed out that traditions may work in a perverse way, that is they should be followed up until they reach the point where they start to interfere with the life of the city, determining the policies and plans for the development of the city:

"Bisogna stare molto attenti con il recupero delle tradizioni e poi bisogna stare molto attenti con il recupero delle tradizioni in senso lato, (...) Non è che si può dire, le tradizioni veneziane e pretendere che la laguna di Venezia sia quella che era 50 anni, o 100 anni, o 150 anni fa. Non è un recupero della tradizione, è una cazzata, punto. Cioè non è un’altra cosa. Pretendere che il sistema di trasporto di Venezia sia quello tradizionale. Ma tradizionale per chi? Cioè, il sistema di trasporto della Venezia del 1200 era tradizionale, perché era consono alla Venezia del 1200. Quello del 1500 era tradizionale, perché era consono alla Venezia del 1200. E quello del 2000 sarà tradizionale, perché consono alla Venezia del 2000, alla Venezia che vogliamo. Non alla Venezia che era nel 1200."

"It is necessary to be very careful with the recovering of traditions, in a broader sense, (...) One cannot talk about the traditions of Venice and act as if the lagoon of Venice is the same as 50, 100 or 150 years ago. This is not the recuperation of traditions; this is nonsense, full stop. To imagine that the transport system of Venice becomes traditional... but traditional for whom? The transport system of Venice of 1200 was traditional because it was compatible with the Venice of 1200. That of 1500 was traditional because it was compatible with Venice of 1500. And that of 2000 will be traditional because it is compatible with Venice of 2000, to the Venice we want it to be. Not to the Venice of 1200". Entrepreneur (1). 2nd round of in-depth interviews.
If according to politicians and some citizens the survival of the city would depend upon subsidies and in general protective measures, in many case the interviewed entrepreneurs have suggested that Venice does not need paternal attitudes, but rather interventions that could allow the survival of activities other than touristic ones.

"I believe that companies other than the usual mask shop, hotel or restaurant can be implemented in Venice. I'd like to point out that the system of economical incentives to install other companies is useless because companies cannot be maintained artificially for long if the market does not favour that activity. Hence, I believe it is better to give less economic incentives and rather create infrastructures that allow a company to operate with efficacy without paternalistic support. The creation of infrastructure implies the idea that the morphology of the city can undergo modifications which will not destroy or pervert the city." Entrepreneur (1). 2nd round of in-depth interviews.

For some interviewees and focus groups participants, Venice misses a clear social-economic plan. It has lost its economical importance in benefit of the neighbourhood regions. Its productivity is becoming mono-functional (tourism) and in that sense is like a laboratory for Europe in terms of mass tourism.

"Ciò di cui assolutamente non si discute a Venezia è il suo destino socio - economico culturale. Si procede su piccole scaramucce, non definibili neanche battaglie, di difesa cooperativa di alcune posizioni di rendita, legate a produzioni industriali mature, per un uso consumistico gratuito del nome di Venezia, per produrre eventi da propagandare (...). Grande tema del dibattito è la salvaguardia: è certo che la salvaguardia fisica della città è preminente a qualsiasi altro aspetto. Ma c'è un interrogativo che pochi si pongono: quale salvaguardia per quale città? Il nodo da sciogliere è quale città vogliamo, verso quali processi tendiamo, qual è lo scenario di prospettiva rispetto al quale vanno definite le strategia della salvaguardia fisica della città."

"The thing that is never discussed in Venice is its socio-economic and cultural destiny. We continue to have small skirmishes, difficult to define (not even battles); to defend income linked to industrial production and the limitless usage of the name 'Venice' to produce propaganda events. (...) The big theme of the debate is safeguarding: it is obvious that the physical preservation of the city is more important than anything else; but there is a question that very few pose: what preservation for what city? The issue is what kind of city do we want, through which process are we going, what is the perspective for which strategies of physical preservation are defined?" Politician (2). 2nd round of in-depth interviews.
For some of the interviewees the phenomenon of “acqua alta”, one of the sustainability issues considered in the scenarios, could only be addressed with technology, whilst others see the problem could be tamed in other ways:

“[Per gestire il fenomeno dell’acqua alta] bisogna fare quello che è sempre stato fatto, cioè utilizzare le migliori tecnologie disponibili, per continuare ad artificializzare intelligentemente un sistema che di naturale non ha mai auto nulla. Perché il primo che, al grido "arriva Attila", si è messo dentro in laguna, ha artificializzato il sistema, atrofizzandolo, quindi lo ha artificializzato, e da quel momento e forse anche da prima, con gli insediamenti romani, la laguna di Venezia, come tutte le lagune del mondo, è un elemento totalmente artificiale, che di naturale non ha nulla. Questo naturalmente non vuole dire che non abbia degli aspetti naturalistici straordinariamente complessi e straordinari, ma sono artificializzati.”

“Se si fosse speso un quarto della cifra destinata agli studi sull’acqua alta per dare contributi ai cittadini veneziani per metter a posto i pavimenti e le finestre sarebbe stato un risparmio in termini di disagio enorme.”

“To manage the high tide phenomenon it is necessary to do what has always been done, that is to use the best technology available in order to continue to create an artificial system that has not been natural for a long time. The first guy arriving crying ‘arriva Attila’, made the system artificial; even before the roman occupation... the lagoon of Venice, as with all lagoons of the world, is a totally artificial element. That does not mean that it does not feature extraordinary and complex natural aspects; but they are artificial.” Entrepreneur/technician (1). 2nd round of in-depth interviews.

“If a quarter of the figure spent on studies about the high tide were given to the citizens to rebuild pavements and windows, most of the inconveniences would have been saved.” Technician (1). 1st round of in-depth interviews.

For one of the politicians interviewed, the issue of the construction of barriers and more generally that of management of the high tides has been treated as a political issue instead of a practical management issue:

“Io ritengo che l’acqua alta ci sarà sempre, anche quando saremo protetti per un metro e mezzo, 2 metri, non potranno chiudere le bocche di porto a 1 m e 10, 1 m e 20, perché dovremmo dire addio a una parte economica della città come è il porto. Io posso dire di no, che non sono ingigantiti questi problemi, perché stiamo vivendo in una realtà, praticamente definita, anomala al mondo. (...) Sono ingigantiti invece, secondo me, le polarizzazioni del dibattito in corso. Sono ingigantiti perché assumono una sorta di schieramento politico...e sono forse ingigantiti per la mancanza di democratizzazione sulle opportunità e sulle scelte da fare. Ciò, sono schierati 2 partiti. Questo ovviamente a livello di elite di gruppi dirigenti. I veneziani rispondono in ragione della loro situazione anche di tipo economico, il partito, probabilmente, dei negozianti, al piano terra, gioca un ruolo e altri ne giocano altri, insomma. Questo è il discorso.”

“I think the high tide will always be there, even when we will be protected for one and half meters or 2, we cannot close the port entrances at 1m 10 or 1m 20, because then we should say goodbye to the port which is an important economic resource of the city. Actually, I don’t think these problems have become greater. What has become greater is the polarisation of the ongoing debate. They are greater because they became a sort of political argument... and they have become greater because of the lack of democracy for opportunities and choices. There are two ‘parties’ and the Venetians respond according to their situation (even economic) or relation to the high tide problem. This is the issue!” Politician (2). 2nd round in-depth interviews.
From the interviews there appears to be a general distrust, both in the projects and the institutions or the consortia appointed to achieve them. It also shows that for centuries the Venetians have been used to coping with the problems caused by the high tide and that the current expenditures are absolutely excessive when compared with the real discomfort caused by this kind of problem. The distrust of Venice’s inhabitants is derived also from the feeling of isolation experienced; all the decisions concerning the future of Venice, especially from the engineering point of view, have been taken “over their heads” and always outside Venice. And this is not only the problem of “acqua alta”.

Venice is not owned by Venetians in many ways... Many of the respondents believe that the destiny of Venice is not in the hands of local actors but in those of outside people and that the politicians in Venice in some ways do not hold much power.

"Be, adesso Venezia è al 100% una città etorodiretta, in questo momento. Etorodiretta l’economia, etorodiretta la politica, etorodiretta la tecnica, etorodiretta, punto. E lo scenario tendenziale, quello della Venezia Inc, la farà sempre più, ecco, volevo dire, pare che con la sua provocatorietà lo dica molto bene, io sono totalmente d’accordo."

"Le (...) forze egemoniche, dal punto di vista politico, come persone, come singole figure, vedono nel proprio ruolo a Venezia, nel ruolo di governo a Venezia, un punto di partenza per aspirazioni politiche di altro genere. Questo perché Venezia, pur capitale della regione, sconta un ruolo non egemone e non, diciamo, preminente a livello nazionale. E’ il problema dei ruoli delle grandi città, a livello nazionale, che devono avere un peso forte anche da un punto di vista politico e non essere subordinate, sostanzialmente, alle decisioni che partono dal centro."

"Well, nowadays Venice is 100% managed from outside. The economy is managed outside, politics is made outside, the techniques, all is done outside. And the probable scenario, Venice Inc. precludes the reinforcement of this aspect - even if the scenario is provocative, it states this aspect quite well and I totally agree." Entrepreneur (1). 2nd round in-depth interviews.

"The dominant strengths (politicians) consider their role in Venice as a departing point for political ambitions of other types – because Venice does not have a dominant role at national level, even being the capital of the region [Veneto]. This is a problem, in the sense that large cities should have greater decision power at political level instead of having to respond to decisions taken at central level." Politician (2). 2nd round of in-depth interviews.

The interviewees in general believe that it is the conflict between politicians and economic groups that is the biggest obstacle to achieving a sustainable plan for the city. Some point out that there is no participation from those that live in Venice on the design of policy or on decision making about the problematics of Venice.
The citizens of Venice do not exist. For two or three reasons. The first one is that despite all it is possible to live very well in Venice. I am talking about the civil population in Venice, probably those outside think that Venice is a terrible place to live. For anyone who was born in Venice and so has the right chromosomes (...), the fact of having played football or 'hide & seek' in the squares, within the 'Venesianità', makes one feel that life is very good in Venice and there are no problems and so one is not a citizen who believes in everyone for himself and God for everyone, (...). Entrepreneurs in Venice don't exist because Venice has never been a city of entrepreneurs; it was always (historically) a city of traders. And the traders are not entrepreneurs. (...) The technicians, it is difficult to say, because Venice from this point of view has a very negative feature, which is not valid only for the technicians, (...). Venice is a fantastic stage! Any smart person who does something in Venice goes public. The appearance is much more important than the action (...). So, citizens who cannot express a common idea for the city, to influence tendencies, or for socio-economics aspects; entrepreneurs who are not entrepreneurs but traders who exploit productive laws and technicians who use Venice as a stage... they are all a devastating shaker for the city!!!

Entrepreneur (1). 2nd round of interviews.

Also, in terms of agency, and actually in terms of concrete execution of actions, the answers were never given as if it was the responsibility of the respondent or of the institution to which he belonged... In all answers to 'Who would be the agents able to accomplish the scenario that you think is most desirable?' respondents tended to delegate politicians, even those who represented the policy makers category tended to delegate an abstract political entity above them. Saying that, in one of the focus groups, participants pointed out and recommended that the future of Venice could not be planned without the participation of all. Not surprisingly, children would never spontaneously see themselves, as actors of the changes they themselves think are necessary. The politicians are the ones to do the job. However, when asked they would point out that indeed they can also contribute.
"Se io fossi stata, adesso dico, un amministratore, io avrei molto, avrei cercato molto di coniugare le attività di sviluppo con le attività di salvaguardia. Cioè, invece di essere, come dire, di viverle come 2 cose differenti, sviluppo non so, tecnologico, nuove tecnologie e salvaguardia fisico - ambientale della laguna, avrei cercato che le 2 attività si saldassero da subito in modo molto evidente".

"Quali sono i passaggi fondamentali per lo scenario preferibile? Costruire una rete di discussioni e dibattito sul ruolo e destino della città, la più larga possibile. Far uscire le forze intellettuali dalle secche della loro collocazione istituzionale, università, la biennale, ecc., e dei rapporti con le istituzioni. Sconfiggere il principio che l'unico obiettivo è la salvaguardia fisica della città. Problemi della salvaguardia fisica si risolveranno, sono conseguenti, cioè, se c'è un progetto politico sociale per la città. Definire la soglia di sostenibilità della presenza turistica e compartecipazione ai costi sostenuti dalla città. Un nuovo progetto ideale della città, crocevia di culture, tradizioni, mondi conflittuali, ma di grande prospettiva per nuove relazioni internazionali."

"If I had been an administrator I would have tried to link the activities concerning development to those of safeguarding. Instead of seeing it as two different and opposite things, technological development and environmental preservation of the lagoon, for instance, would have been addressed in an integrated way right from the beginning." *Technician (1). 2nd round in-depth interviews*

"What are the fundamental steps to achieve the desirable scenario? To construct a network of discussion and debate about the role and destiny of the city, the widest possible. To get out the brains from institutions, universities, La Biennale, etc. and to initiate relationships amongst institutions. To fight the idea that the only principle of conservation is that of physical safeguarding of the city – the problems of physical safeguarding will be consequent if there is a politico-social project for the city. To establish the sustainability thresholds of tourism and the cost supported by the city. To create a new project ideal for the city, integrating culture, traditions, conflicting interests, yet emphasising new international relations." *Politician (2). 2nd round in-depth interviews.*

2. To develop scenarios for Venice in order to explore the contradictions of sustainability

The contradictions of sustainability as stated by Dovers (1997) have emerged through the scenarios themselves since each scenario emphasises many of these contradictions and have been introduced during the social process through purposeful questions to interviewees and participants in focus groups (see comments from the interviewees as an example).

"Secondo me, lo slogan è 'conservare innovando'. Cioè il problema è quello, come tutte le altre città, della crescita, però una cosa è crescere in America, per cui si costruiscono i grattacieli ex novo, una cosa è crescere in un centro storico che ha una sedimentazione culturale molto articolata. Per crescere in questo contesto bisogna conoscere molto bene il territorio, i monumenti, la cultura, l'ambiente, cioè bisogna essere molto più articolati. CONT.

"I think that the slogan is "preserve innovating". The problem [of Venice], as in other cities, is that of growth. It's one thing growing in America, you can build skyscrapers, it's another to grow in an historical centre that is culturally well established. To grow in this context it is necessary to know very well the territory, the monuments, the culture, the environment, that is, it is necessary to be better articulated. CONT.
The VISIONS project at the JRC

"These types of studies have been done by several people; the Italian state has invested a lot in this, so there is a lot of potential to have this international specialisation. Venice is not necessarily linked to its seventeenth century aspect, it can evolve without being perverted. (...) I believe that the actions that should take place should integrate in a rational way innovation worth preservation, hence safeguarding with development – also considered in legislation – which are usually seen as in antithesis. The growth of Venice encompasses its adaptation to modern times, which does not imply the perversion of its unrepeatable characteristics." Technician (1). 2nd round of in-depth interviews.

The fact that Venice is a unique place does not mean that it is not a part of the "global village". This usually forgotten fact is seen as an obstacle to develop a sustainable plan for the future. For this politician, this is not paradoxical with the fact that Venice is a place with very specific characteristics.

"L'ostacolo sta nelle forze sociali politiche che non hanno una dimensione del villaggio globale in cui si colloca Venezia e il suo territorio."

"The obstacle [to achieving a desired future] is related to the social political strengths that do not recognise that Venice and its territory are part of the global village." Politician (2). 2nd round of in-depth interviews.

3. To create contexts of interaction with scientific tools, in particular scenarios and information technologies in order to examine how people relate to those (and in particular to the scenarios developed during the project).

In general, the scenarios either presented in the form of "press articles" or in multi-media fashion provoked a great deal of discussions and reflections, that is none of the participants in the social research process was indifferent to the scenarios. The perceptions about the scenarios per se were very different. In the many cases, the scenarios were understood as predictions or forecasts rather than as an exploration of possibilities. This was more evident in the first round of interviews where spontaneously the scenarios provoked more rejection in the participants; in the 2nd round of interviews there was more time to digest and the scenarios were used in the debate in a more constructive way. This 'confusion' is inherent to the general ideas that one has about the envisioning of the future, crystal balls, premonitions, and all sorts of gadgets to imagine the future. Rarely, one thinks of these types of gadgets as insights and therefore occasions of reflection.
This is of course more evident with scenarios, which have a structure, provide justifications for their coming into being and follow a logic – the one implied in the narrative voice, of course.

During the social process, scenarios either were discussed in detail – especially in the in-depth interviews – or were used as a means of justification for some opinions or as a means of example in other situations. This is not saying that in the latter case scenarios were ‘ignored’, but certainly were not the focus of the discussion when dealing with the future problematic.

Sometimes when asked about their opinion in terms of likely scenario or preferable scenario, respondents would rather try to imagine their ‘credible’ and ‘probable’ one, different from the set proposed. Some of the interviewees have used the scenarios to state which combination of traits from the different scenarios they see as most probable, elaborating justifications, etc. Even those that refused the scenarios in first place, when asked to envision a future, would imagine concrete plans for achieving a desirable vision and would many times recognise that their view of the future was a combination of 2 or more of the scenarios presented. For instance,

“Oppure anche raffigurarmene uno [scenario], che secondo me è probabile. Uno che secondo me, invece, è credibile. Cioè, secondo me, la scenario più probabile è quello che, come dire, ci sia come una sorta di circolo perverso che si crea fra conservazione esasperata e una, invece, nuova cultura turistica che è sempre più invadente.”

“Rather to imagine one [scenario], that according to me is likely; one that is credible. That is, I believe that the most probable scenario is one that is in-between a desperate preservation and a new tourist culture (which is becoming more and more invading)”. Technician (1). 2nd round of in-depth interviews.

The refusal to accept the scenarios at first, seen as images of a confused crystal ball and the tendency to ignore them in the discussion about the futures is due to the fact that often the respondents did not see the scenarios as metaphors or archetypes of possible futures – perhaps a difficulty of thinking in terms of scenarios? Instead they were seen as wrong or intangible futures that should not even be considered in a discussion, thus very far away from the respondent’s own wishes (but not necessarily far away from the scope of possibilities).

This does not mean that all participants in the social process were not able to discuss the future of Venice – indeed people are able to articulate in their own logics trajectories to desired scenarios, yet usually focused on one or two dimensions of the impacts a proposed change could imply. Also, the participants tended to retain the final image as the element of discussion overlooking the justifications of the scientist. Occasionally, some participants would pay attention to the trajectory and even require more information than that provided. During the in-depth interviews as participants had to respond to a guiding questionnaire this fact is less apparent because some of the questions addressed exactly the justifications built in by the scenario expert to arrive at one or another vision.
The set of scenarios developed for Venice was expected to dramatise the alternatives, and highlight the fundamental differences. In this sense, as said before, the developed scenarios were not intended to be realistic but rather metaphorical. The scenarios are actually ideal types as far as scenario methodology is concerned.

Here are summarised and illustrated some of the reactions to the scenarios during interviews and focus groups:

- In general, most of the interviewees have considered the scenarios exaggerated and too extreme, as well as a provocation. In many cases interviewees would point out that a narrative voice from Venice would never have those visions.

  "Tutti questi scenari mi pare che prospettino un futuro di Venezia piuttosto negativo, tutti quanti. (...) tutti questi sono scenari ipotizzabili per la nostra città, ma in maniera molto virtuale e poco reale, perché, se gli intervistati sono attori o comunque partecipanti della vita attiva della città, è difficile proprio viverla così dall'interno come facciamo noi, è difficile per noi ipotizzare una decadenza così tragica di Venezia, forse perché la amiamo così tanto e lavoriamo così tanto per lei che non possiamo permetterci di rassegnarci a quest'idea di perderla in così poco tempo, anche se ci sono veramente dei problemi non risolti, come appunto evidenziato da questi scenari che evidenziano molto il rapporto esistente tra la città e l'acqua, che attualmente sta diventando un problema sempre più pressante."

  "All these scenarios give the impression of a rather negative future for Venice, all of them. (...) They are all very virtual and very unreal hypotheses for our city (...) if the interviewees are active participants in the life of Venice (as internal actors), it becomes difficult to accept these scenarios, it is difficult to hypothesise such a tragic decadence of Venice, maybe because we love it so much and we work so hard for her that we cannot tolerate this idea of losing it in such a small period, even if there are unsolved problems as showed by these scenarios which explicitly show the relation between the city and the water, which nowadays is becoming an ever larger problem."

- The scenarios have been strongly criticised because three of them (Venice Inc.; Gotham City and City-Machine) are characterised by very negative features; whereas Cyberia presents a future that is too idyllic. In this perspective, the choice among the scenarios is practically obvious, because of their strongly determined identity that makes them unrealistic. Yet, as pointed out earlier, in many cases the participants would state that their image of the future would take elements from two or more scenarios.

  "L'ipotesi di scenari, più probabile, è quella che vede parti dello scenario che voi definite Venezia Inc. insieme con elementi di Venezia Cyberia, che è anche ovviamente lo scenario maggiormente favorevole tra quelli che Lei mi ha mostrato."

  "The most probable combination of scenarios is the one that takes elements of the scenario defined by you as Venice Inc. and elements of the scenario Cyberia, which is obviously the scenario that is most favourable amongst the set."

VISIONS - Adventures into the future
Another factor that seems to be important is the perception of the long-term. A number of responses (e.g., a decrease in tourism is deemed very improbable; it is impossible that the Venetian economy would be run by a few transnational companies) seem to be derived either from a short-term view or from a difficulty of appreciating the magnitude of structural changes already affecting the farthest reaches of the globe.

4. To create contexts of interaction with scientific tools, in particular scenarios and information technologies in order to examine how scenarios influence the perception of the FUTURE.

Participants in the focus groups were asked if they had thoughts about the future of Venice in 2000 when they were young. The answers were that they were too busy with their lives to think about the future of the city. Probably this type of research helps to initiate a process of awareness and of reflection — very limited in this case — still the starting of a process that could be extended into an adequate social enquiry process.

Many times interviewees would take elements of the scenarios as examples to describe their own visions of the future. So, in that sense scenarios helped people to address issues that otherwise would have been omitted from their own analysis. Additionally, the ideas in the scenarios were useful in putting into perspective the participants’ own visions of the future.

Elder people do not like catastrophic futures or futures that contain very negative images — the myth of Venice at work or simple rejection of calamities? In that sense the range of possibilities in the scenarios were not fully explored because sometimes they were overlooked.

Another interesting function of the scenarios has been that of provoking a whole set of different futures illustrated by drawings and computer animations in the children’s imagination. The images of the futures are all extreme, some of them catastrophic but the majority exploring the very same ideal, that of saving Venice — see Appendix 3 and CD-ROM.
5. To create contexts of interaction with scientific tools, in particular scenarios and information technologies in order to examine how scientific tools (in particular scenarios) can be integrated in social processes by triggering awareness, discussion and by developing agency.

A great deal of work was put into the formats of presentation of the scenarios to the interviewees and participants in the focus groups. The initial impact of the scenarios when proposed to the interviewees does influence the attitude and response towards this type of modelling of the future. Indeed, the initial reaction of rejection of the scenarios by the participants can be mitigated by the way in which they are proposed. As said before, the purpose of the scenarios is to provide a basis for discussion, but if scenarios are not well framed (as research objects) and justified, they can become other than a provocative element in the discussion, a suspicious one — this is even stronger when participants know that scenarios were created by someone who is not from Venice.

As part of the refinement of the scenarios the JRC team has done some work on the communication aspects related to the presentation of the scenarios narratives including the development of some multi-media material to enhance the graphical message of the scenarios' narratives (see Chapter 4). The basic assumption is that scientific issues such as the generation of images of the future have to be placed into a context that efficiently attaches the people to the elements that scientists and non-scientists might want to explore together. At the same time — because this exercise deals with coherent imaginary revelations of the future — tangible elements that were the origins of the stories being told to the participants have to be provided, justifications for the rationale of storylines have to be produced, etc. That is achieved through metaphors, immersions into imaginary virtual worlds, but basically through the exploration of places where both the story plot and the reasoning to achieve it are explicitly embedded into the scenario's interface. For the in-depth interviews, “press articles” of the future were prepared, the basic structure, with slight variations for each of the scenarios, whilst for the focus groups multi-media presentations were prepared according to the age of the participants — see Chapter 4.

The participants feel more willingness to pay attention to the ideas developed in the scenarios when they are presented in a tangible and appealing way. However, beyond agreement or disagreement with the scenarios in general or details of them, those have been rather triggers of a discussion of the future of the city and of its present situation, especially in the case of the participants in focus groups. As pointed out earlier, the reactions to the first set of scenarios were more aggressive that in the subsequent phases of the social research. The great differences were not only the substantial effort put on the development of attractive forms of presentation but also because justifications, rationale and tangible elements were introduced. Therefore this can constitute a recommendation on how to present scenarios to trigger useful discussions and awareness about the issues involved on the thinking about the future.
6. To create contexts of interaction with scientific tools, in particular scenarios and information technologies in order to examine how people can suggest adaptations or modifications in order to improve their quality (response to purpose).

Although, people would not make specific suggestions for the scenario, it can be observed that their comments about the pessimistic nature of the scenarios, or the extreme visions they describe, that participants expect less dramatic visions and scenarios contents. Some of the participants lacked quantitative analysis, whereas others would have liked to see a focus on specific problems in the city that they are concerned with and that obviously the 4 scenarios didn't address and couldn't answer...

On the whole, the scenarios as in their present form provoked curiosity and triggered a great deal of discussions.

7. To develop scenarios for Venice in order to explore whether there could be a sustainable vision for Venice and for Europe on 2050.

This emerged from the reactions of the participants in the social research process towards the pessimism embedded in the majority of the scenarios. People have the notion that there is a need to explore ways to achieve sustainability, which coincides with 'saving Venice. Innovation and diversification of activities are not seen as incompatible with the preservation of the city, quite the contrary. However, the most important message that emerged from this process is that the debate about sustainable Venice should involve all.

5.1.4 Observations In Relation To The Four Scenarios And Drivers

Observations in relation to the adopted drivers were addressed during the interviews. Most of the drivers have been confirmed. The strongest arguments were against the possibility of retaking the industrial pole Marghera (which is a driver for both scenarios Gotham City and City Machine). Instead, interviewees talk about the conversion of Porto Marghera as a site for new economic activities.

The most important specific comments on each scenario were:

Gotham City – first called Rot and Decay

This scenario has been considered too catastrophic and, consequently, one of the less trustworthy. The interviewees have pointed out how pollution is soon to be kept under control and its level lowered. The closing down of the fishing industry (in its present form) is strongly desirable, since the current fishing systems are deemed as one of the main causes of the environmental degradation of the lagoon. However, a revival of fishing on a traditional and non-industrial base is highly recommended, for it will supply a new living and chances of work to the inhabitants of the lagoon islands.
Emigration from the historical centre is considered an inevitable trend in the future of Venice and it has been a continuous phenomenon. It is due to the high housing costs, lack of services for the inhabitants, difficult communications with the mainland, thus making commuting very inconvenient. A decrease of tourism is deemed as very improbable, even if many interviewees consider it as a positive trend.

The transfer of Venice's cultural heritage to the mainland is also considered improbable, yet, some respondents have considered the transference of monuments and cultural heritage to the terraferma as feasible and probably the only solution to save that rich heritage from the uncontrolled fluxes of tourism that exist nowadays. For example:

"Attualmente la situazione del patrimonio artistico veneziano è drammatica, la continua esposizione all'inquinamento, insieme al vandalismo turistico, provocato dalle orde di turisti che giorno dopo giorno si avvicinano per Venezia, mangiando sui monumenti o scacchiandoli i loro nomi sulle pietre del '700, stanno provocando un deterioramento progressivo di statue, palazzi, calli e monumenti in generale. Quindi, come dicevano, forse il trasferimento dei monumenti sulla terraferma potrebbe essere una soluzione disperata ma quasi accettabile se paragonata ad una possibile devastazione definitiva del patrimonio artistico veneziano. Chiaramente, la mia è praticamente una provocazione, come veneziano mi si spezzerebbe il cuore al pensiero di vedere in giro per Venezia delle copie di monumenti che sono stati trasferiti in qualche museo-coppanone sulla terraferma, date le parti di Mestre o addirittura di Padova."

"Nowadays the situation of the Venetian cultural heritage is dramatic, continuously exposed to pollution, touristic vandalism provoked by the number of tourists that arrive in Venice every day, eating close to the monuments or writing their names on the stones of the XVIII century, are provoking a progressive deterioration of the statues, buildings, roads and monuments in general. So, as I said before, maybe the transference of monuments to the terraferma would be considered a desperate solution but almost acceptable if compared with a possible devastation of the Venetian cultural heritage. Clearly, this is a provocation, as a Venetian it breaks my heart to think of seeing copies of monuments in Venice that had been transferred to a museum in the terraferma, in Mestre or even Padova." Citizen (1). 2nd round of in-depth interviews.

"I find this idea of transferring the treasures to the terraferma a possibility which is a direct consequence of the transformation of Venice into a city exclusively for tourism, neglecting its cultural heritage and encouraging more striking symbols such as gondole, masks or the Carnival." Entrepreneur (2). 2nd round of in-depth interviews.

City-machine

This scenario has been almost generally rejected and considered the least probable and the remotest from reality, some judging it as the most 'monstrous' from the set, classifying it as the most pessimistic: a "Blade-Runner version of Venice".
Clearly this scenario recalled the ‘MOSE project’ for the majority of the interviewees. Some consider the latter catastrophic, others less but in the majority of the cases the interviewees have almost generally agreed on the necessity of engineering measures to solve the problems connected with the large floods and the management of the lagoon.

Some participants deemed engineering works as compulsory, considering that Venice always was an “artificial city”, that has undergone massive interventions all through her history. Others however point out that ‘soft’ solutions could be enough, small interventions instead of ‘traumatic’ interventions such as the MOSE. This type of approach is more favoured amongst citizens, entrepreneurs and some politicians who were interviewed.

The values (engineering culture) embedded in this scenario are generally taken as elements of the discussion. The final 2050 vision is usually considered absurd but possible interventions such as the MOSE project are deemed negative mostly because of their explicit engineering culture to solve problems and not because they are artificial, because Venice itself is artificial. For instance, this comment illustrates this:

“(...) Serenissima inc. [Venice Inc.], immagino sia, lo scenario che, a mio parere, (...) più si avvicina a quello reale del 2050. Quello che può, in qualche modo, integrarsi col precedente, non fino agli esteri tragici ivi descritti, ma comunque con tutti gli aspetti negativi narrati, riguardo alla cultura ingegneristica nell’operare Venezia e nella sua laguna, è tsunami a Venezia (City Machine)”

“I Imagine Venice Inc. as the scenario that is closer to the real situation in 2050. Yet, the scenario that in some ways can be integrated with the previous scenario, excluding the tragic events described there, but anyway with all negative aspects, in terms of engineering culture to address Venice and its lagoon problematics, is the City Machine scenario.”

Politician (2) 2nd round of in-depth interviews.

Cyberia – first called Sustainable Life

The majority of the interviewees and participants of the focus groups have considered this scenario as the most adequate. In general, the aims pursued by the politicians, the technicians and the local administration are the following: stabilisation of the morphology of the lagoon; control of pollution; minimisation of the discomforts caused by the high tide – this to be achieved by raising the level of monuments and strategic areas; and the control and organisation of the tourist flows. These are fully supported by the citizens. It is also desirable that in the future, tourism would not represent the sole economic source in Venice, even if great difficulties were foreseen with this.

Presently, there are plans to share on the Web some elements of the Venetian cultural heritage (e.g. biblios, paintings, drawings and so on), but the creation of a “cultural Silicon valley” is considered too far-fetched.

The restoration of traditional activities is considered as a fundamental element for the sustainability of Venice. This refers to those activities that are presently industrialised or imported (such as the Venetian lace made in Taiwan) or very tourist-oriented activities like Murano glass, and to fishing and handicrafts.
Venice Inc.

This scenario is generally considered as the most probable and many interviewees deem it as the most natural and responding to reality; it is even thought to be already in action in many aspects. In focus group 2 one participant pointed out that indeed Venice had not changed much in terms of physiognomy in the past 40 years, yet its social and economical tissues are completely different. See Box 5.1 for comments from the scenario expert on why this could be the least probable scenario.

Box 5.1: COMMENT BY GILBERTO GALLOPIN TO THE VENICE INC SCENARIO.

"Elements to examine about Venice Inc.:

1. It is deemed impossible for the Venetian economy to be run by a few multinational companies. There will always be, as it is at present, a strong economical sector, above all tertiary, characterised by a large number of small firms.

2. The control of pollution is considered feasible, even if it will not be achieved through the profits from tourism, since according to the Italian tax system, the income redistribution is on a national and not local level.

3. The project of controlling the high tide is considered a great mistake. Even if the high tide is a tourist attraction, it cannot be artificially run and the tourist attraction lies in the idea of the high tide rather than in the flood itself.

4. As far as the local population is concerned, the solutions suggested by the scenario could be implemented, provided that the communications with the mainland are improved, for example by means of a lagoon underground railway."

5.2. PARTICIPATORY METHODS & SCIENTIFIC TOOLS

5.2.1 Process: Design Of The Society – Science Interface

In this project the conditions to introduce scientific tools into social discourse are explored in order to initiate a debate on sustainability issues and the futures of a region with major actors and citizens. Therefore, the research results of this topic concern the design of a process that interfaces scientific products and processes with the society.

5.2.2 Participatory Methods

As extensively described in Chapter 3 this project deployed two methods of qualitative social research, in-depth interviews and focus groups. That is because our motto has been listening to people and learning. The research results of this topic concern the appropriateness of such methods to involve social actors in the extended debate about sustainability.
5.2.3 Findings

1. To create social research contexts, in order to enable people to explore the links between environmental and socio-economic processes emerging from envisioning the future.

Both group contexts and individual interviews allow the discussion of environmental and socio-economic processes that are inherent to debates about the future and about sustainable development. These contexts allow the discussion of these relations and also allow the emergence of issues that have not been contemplated or fully analysed by the scenario materials provided to initiate such a debate.

2. To create social research contexts, in order to explore the integration of different perspectives in the scenario building process.

The integration of perspectives is primarily done by the narrative voice that designs the scenarios according to his/her values, management options, etc. From the social process it was obvious that if some of the respondents had to build the scenarios, those would have been different in terms of the values that would drive the scenario or in terms of the choice of events that would determine the trajectory and final vision. By presenting 4 different scenarios one could think that the incorporation of different perspectives is embedded in the act of diverting. This is not the case. When presented to the different people, even if one of the scenarios is chosen as the most desirable (or probable), there has been always a tendency for social actors to reshape it according to their views. Hence, the integration of perspectives should be a participatory one by involving the social actors in the building of the scenarios’ process. The idea has been adopted and it has been essential to incorporate different perspectives in the scenarios.

As an example we refer to the pessimistic views showed in three of the scenarios. Many of the respondents could not see that the future of Venice is that pessimistic and would suggest ‘courses of action’ that would change the scenario into an optimistic one.

3. To create social research contexts, in order to evaluate the actors’ place, agency and determination about taming the future – and inclusiveness in policy making.

People tend to delegate to politicians and point out that the destiny of the city has been in the hands of external actors to Venice. Yet, they are unhappy about the lack of civil participation in the decisions for the city, pointing out that the greatest decisions that have been taken for the city and have determined the present situation were done ‘over their heads’.

Also, if on one hand participants tend to recognise that they should intervene in the management of the city, on the other hand they also say they need an intervention from outside, such as a European institution that either acts with a supervision role or as an incentive to diverge the activities of Venice to services other than tourism.
The VISIONS project at the JRC

"There is a need for guidelines from the governments (in the plural), because as a single entrepreneur, one will never manage. There is no magic formula. The sole possibility is to have a government that is not clearly linked to financial speculation and that facilitates the diversification of productive activities." Technician (1) 1st round in-depth interviews.

"One of the solutions for the city would be that of attracting to the city an international organisation, which would lead to diversification of services" Participant (1) Focus Group 2

The lack of agency of Venice actors is seen as directly linked to the lack of economical forces that have sufficient power to drive the city economy in other directions. Probably the great assistance that is offered to Venice is due to the fact that most of the profits from tourism do not remain in Venice after all.

"The problem in Venice is the great lack of economic drivers. The tourism is in the hands of external lobbies (in Venice there are no banks, no strong companies). The local economical forces are directed towards the management of infrastructures." Entrepreneur (5) 1st round in-depth interviews.

"Venice is characterised by the absence of important entrepreneurs with high outward projection (such as Benetton). It is not a well-defined centre of power; everyone has limited power that is executed in such a way that the overall situation gets blocked. Not even the multi-nationals have an important role because their role is purely economic and does not influence the Venice reality; there are no transfers into the city". Entrepreneur (5) 1st round in-depth interviews.

"The profits are controlled by the tour operators who transfer them where it's most convenient for them". Politician (4) 1st round in-depth interviews.

Despite their recognition of the so far little interest of the citizens in the decisions taken for the city, probably due to the very nature of Venetians, participants to the focus groups 1 and 2 final statements, include participation in the decisions about the management of the city as a key topic.

"Partecipiamo!!!" Final statements of focus group 1.

"Veneziani: mettetevi d'accordo!" Final statements of focus group 2.
4. To evaluate the experience of research done on the basis of qualitative, interactive individual and group work compared to other modes.

The greatest difference with a discussion of the future problematic based upon scenarios is that due to a closer relation between the interviewee and the interviewer and because in the case of in-depth interviews a guiding questionnaire is adopted as the guide of the discussion, the scenarios are in a certain sense more the focus of the discussion than within the groups. In groups discussion tends to be on ‘future’ in general, on the visions of the future of the participants and as said before the scenarios are used many times as a justification or to sanction an opinion. Also, in the case of the groups the controversy about the scenarios is less evident because the participants tend to give their own reflections and arguments about the future of the city, almost ‘ignoring’ the scenarios.

5.2.4 Scenarios For Participatory Methods

On the basis of the previous discussion and the lessons gained from the social research process, it is possible to make some suggestions on the use of the scenarios in participatory research.

- **Present the scenarios as contrasts**, highlighting extreme alternative developments; clearly state that they are not predictions, but an attempt to define the possibilities for the future.
- Guide people into clearly separating their perspectives on probability and wishful thinking.
- Stimulate people to imagine the long-term future, and to be aware of the magnitude of changes that can occur in half a century.
- Stimulate people to reflect on what conditions should exist for a particular scenario to come to be.
- Use scenarios to initiate a discussion of the future in terms of actions to be done, actors’ roles and envisaged socio-economic and environmental impacts for choosing one or other path to the future.
- Outline uncertainties and the whole complexity of elaborating such studies on the grounds of our present knowledge.
6. INTEGRATION OF VENICE SCENARIOS WITH HIGHER-LEVEL SCENARIOS

6.1 INTEGRATION WITH EUROPEAN SCENARIOS – STORY 1

The integration of both levels of scenarios has undergone several phases, namely the identification of the affinities and tensions between regional scenarios and global format scenarios. However, because of methodological differences when building the two sets of scenarios, which reflected on the actual format of the scenarios, a close establishment of tensions and affinities is not possible. This not only concerns the conceptual framework of development of scenarios but also the style of presentation of the driving forces and the specific storylines, narratives, and quantitative aspects of the scenarios. Another major issue that had to be considered is the representation/presentation of scenarios’ time-line issues.

Figure 6.1: Compatibility between European scenarios and Venetian Scenarios
The issue brought about the discussion of precision of information. Indeed, the JRC team has decided to develop Venice visions for 2050 only – the inexistence of intermediate time steps was decided because such pseudo-precision adds nothing to the role of the scenario within a social process and indeed it increases uncertainty. Therefore, it was deemed sufficient to describe the sequence of events without introducing further elements of numerology.

Saying this, the JRC team has also explored how to integrate the visions considering the European scenarios as the context for the Venice ones, which required the analysis of narratives, also in collaboration with the ICIS team. The scenarios were first analysed in three areas in which they could be compared with respect to content: 1) driving forces, 2) driving values, and 3) specifics. The first two of these can be used to see whether the scenarios are likely to be similar enough to warrant a detailed comparison to look for incongruities in the specifics.

Setting the European scenarios as the context for Venetian scenarios has led to a more congruent type of integration; the rationale behind this integration story is the exploration of different levels of compatibility between a high-level scenario and a lower level scenario. Compatibility, as used here, simply means that a given scenario is not obviously at odds with one on a particularly higher-level. Figure 1 (previous page) indicates the compatibilities found between the 4 Venetian scenarios and the 3 European ones (Knowledge is King – KK; Convulsive Change – CC; and Big is Beautiful – BB as in Rothmans et al. (2000))

The question posed is then, with which higher level scenario is a given lower level scenario compatible, i.e. likely to co-exist? So, the European scenarios are regarded as the context for the Venetian scenarios. The criterion of conceptual compatibility (high/low) seems to be the best to use here. Numerical comparisons risk falling into numerology, given the conceptual and constructive differences between the scenarios of the different levels. The compatibilities are hopefully self-evident from reading the scenarios.

This integration framework has started from a comparison of scenarios’ structure and contents, namely the driving forces, the driving values and the final vision of each set of scenarios. For this type of integration, coherence of scenarios’ trajectories had also to be studied, this consists of analysing the chain of events in Venice that could have a correspondence with those in Europe (but not necessarily manifesting in the same manner) and also the identification of the crucial elements of the European scenarios that could influence the destinies of Venice in 50 years – Box 6.1 summarises this exercise, but the full comparison is illustrated in boxes 6.2 through 6.7, which indicate events described in the European scenarios that are compatible with the Venetian scenarios.

The consideration of scenarios at higher scales is useful (apart from other reasons pertinent to the VISIONS project) as a way to add perspective to the possible scenarios for Venice, and to discuss the relative degree of compatibility between the local scenarios and the European and global ones. For instance, a scenario such as Venice Inc., which might be considered quite unlikely in a world that represents the continuation of past trends, would be much more believable in a world dominated by Big Business.
Detailed Comparison of Scenarios

Gotham City

Gotham City has compatibilities with both Knowledge is King and the Convulsive Changes scenarios. In boxes 6.2 and 6.3 we show extracts from the European narratives that could be a context for the Venetian scenario, including the indication of time and also the elements in the final vision of the European scenarios that could match that of the Venetian one.

Box 6.2 – GOTHAM CITY AND KNOWLEDGE IS KING.

Extracts from the trajectory

2010 – 2020 (...) Either due to financial reasons or simple rejection of the information based lifestyle, around a third of the society becomes excluded from products and services associated with the information-based society to which they previously had access. There are two clear groups: those that are excluded because they are unemployed and cannot afford the increasing costs; and those that are excluded because they have become disenchanted by information technology and choose to reject the lifestyle. (...)

(...) The collapse of the thermo-haline circulation causes average temperatures in Europe to cool by up to 10°C by 2015. (...) Across the rest of Europe there are also changes in seasonal patterns with winter lasting longer annually.

(...) And there are the ‘unconnected’ (around one third of society). They are excluded from this networked ICT society either due to lack of financial resources or due to a conscious decision to reject it. Increasingly severe winters highlight the extremes of these social poles as colder winters affect the excluded most. The ‘unconnected’ are generally in low paid jobs or unemployed and are affected by the higher cost of heating their homes. In addition, food prices of certain products increase when storms, floods and unseasonable frosts result in destruction of crops in agricultural regions.

Technology/Innovation 2020 (...) ICT has forged a schism in society creating new lifestyles from which many are alienated.

Factors: Environmental degradation Inner cities begin to decay as the more affluent migrate to other areas where houses are built on land previously used for nature. (...)

2020-2030 (...) The last two decades of industrial relocation Eastwards have left a depleted, virtually non-existent traditional industry sector in Western EU countries. The majority of the traditionally skilled workers with obsolete skills in an information based society remain unemployed or in low-paid part time work. In addition a growing number of service industry workers have become redundant, as the nature of their work has changed. Their skills are also obsolete, taken over by computers. The persistently high communication costs prevent the unemployed and low wage earners from accessing the information based society. (...)

Technology/Innovation 2030: ICT has created social unrest. The excluded stage protests to publicise their poverty, the lack of employment opportunities, the neglect of local infrastructure and poor democracy. (...)

Vision 2050 extracts

Imagine...the social empowerment expected from establishing self sufficient communities never materialises.

Local initiatives fail in their aim of stabilising communities (...) Poverty becomes widespread; drug and alcohol abuse rises sharply leading to crime. (...) this greatly divided society...

Environmental degradation factor: (...) The floods in the Central and Southern parts of Europe caused erosion and destruction of natural habitats as well as exacerbating water pollution. (...)

VISIONS - Adventures...
Box 6.3 – GOTHAM CITY AND CONVULSIVE CHANGES

Extracts from the trajectory

2000 – 2010 A generally healthy European economy facilitates public willingness to spend money on the environment and make certain lifestyle adjustments. (...) On the regional level the north and northwest of Europe sees increases in precipitation, more frequent and increasingly severe tornadoes, gale force winds, and storms. (...) The coastal zones of the Netherlands, Germany, Ukraine, Russia and Baltic states are frequently inundated, as are many Mediterranean deltas in the south of Europe. As well as coastal flooding, river flooding is an increasingly common event. Many of the natural flood plains have been over-run by development. The floods take the residents of the populated flood plains by surprise. In the milder cases this causes temporary migration of people who return when the floods subside to rebuild homes and rejoin communities. In the more severe cases flash flooding results in fatalities and destruction of homes, farmland and infrastructure. (...) When the flood waters subside, they reveal the extent of the environmental destruction. The floods change the shape of the environment drastically. (...) As well as destruction of the natural environment the floods destroy human-made infrastructure. (...) They destroy roads and buildings, bringing transport and business to a halt, resulting in great financial costs. The cost of flood damage, loss of business and the construction of further prevention measures are immense for the countries in the affected regions. (...) Large scale attempts to prevent disasters resulting from such extreme weather events are launched, such as upgrading existing flood defences and establishing new ones in new flood prone regions. The flood prevention measures comprise a combination of traditional and novel methods. (...) In cases where space for this is scarce, residents are offered compensation to move away. (...)”

Givens 2010: Climate Change - Global climate change has occurred rapidly with varying regional impacts in Europe. The north and northwest have become wetter, while the south has become dryer. There is an overall temperature rise outside of the range of natural variation and a significant increase in the frequency and severity of extreme weather events.

2010 – 2020 (...) Changes in the European climate continue. As average temperatures rise, precipitation patterns become distorted and extreme weather events occur with increasing frequency. (...) Temporary migration turns to permanent migration out of regions persistently faced with floods, mudslides and storms. The majority of people migrate to urban areas within their own country, creating a need for new houses. New housing estates emerge on the urban outskirts and on land around main routes into cities. (...)”

Mid-term Factors:

Equity - Climate changes has highlighted social inequity. In all regions, those less able to cope suffer more. This in general increases inequity. There are issues of inequity associated with restricted access to water in drought regions, less capacity to adapt to floods and other damaging events.

Employment - There are regional shifts in employment patterns associated with climate change. Mitigation forces employment in energy-intensive industries to decline and to increase in energy-efficient industries. The environmental impacts of climate change cause regionally distributed decline of agriculture and tourism and subsequent job losses. (.....)

Environmental degradation - Overall the quality of the environment is degrading. Floods and flood prevention causes degradation of coastal environment (.....).

Economy – (...) The high cost of abatement strategies together with the cost associated with flood damage and prevention, impact on the economies of some countries quite severely.
2020 – 2030 (...) Impacts of climate change on the environment are also intensifying. (...) Coastal flooding causes loss of species when the wetlands are destroyed. (...) The environmental hazards and economic decline cause tourism to cease in [many] regions. (...) The cost of adaptation and damage caused by climate change, such as repairing storm damage to buildings and infrastructure (including electricity generation), building flood defences and water management schemes, is an unexpected expenditure in addition to the large investments made in order to prevent climate change. This brings some of the most affected countries close to economic collapse.

**Givens 2030: Climate Change** - (...) Increasingly aggressive storms and extreme weather events have had serious social, environmental and economic consequences.

2030 – 2040 (...) 

**Imagine …technology is not able to provide adequate adaptation to climate change**

The technological sceptics turn out to be correct, technology is no match for the forces of nature. Innovations in adaptation technology prove to be inadequate to protect society from environmental change. The costly adaptation schemes have caused further environmental damage by interfering with nature and result in new environmental problems. For example, huge engineering works to prevent flooding create environmental impacts due to their interference with the hydrological system, creating new risks. The adaptation industry is not the new economic sector that many thought it would become, it is an industry burdened with debt and has a severely dented reputation.

(...) 

**Cyberia**

Cyberia has compatibilities with Knowledge is King scenario. In box 6 we show extracts from the European narratives that could be a context for the Venetian scenario, including the indication of time and also the elements in the final vision of the European scenarios that could match that of the Venetian one.

**Box 6.4 - CYBERIA AND KNOWLEDGE IS KING**

**Extracts from the trajectory**

2000 – 2010 (...) Economic benefits (e.g. declining communication costs) together with technology and innovation policy (e.g. more computers in schools) and the interest of the whole society drive the Information Communication Technology (ICT) revolution forward at a rapid rate. As more user-friendly and accessible ICT products and services are available, actors are becoming increasingly dependent on them: businesses for commerce, NGOs for networking, scientists for communication and information gathering, and policy makers for enhancing participation of citizens in decision-making through, for example, on-line voting. (...) [The] 'information economy' [expands] at a faster rate than expected. This economy is a growing employer for graduates creating new jobs in Internet business and software development. (...) 

(...) the levels of Greenhouse Gas emissions in the European Union are now predicted to fall regardless of implementing measures, as a consequence of the decline of the traditional industries. The targets can be met with less expenditure and draconian measures than were predicted at the time the agreement was made.

(...) Although public transport is encouraged, there is a also trend towards modifying collective modes of transport to satisfy the demand for more individual modes. The telematics systems currently in the prototype phase are examples of such transport modes.
Technology/innovation 2010: The economic transition from traditional and manufacturing industries to a knowledge intensive-industry and ICT based economy has proceeded at an alarming rate. This has caused job losses in particular in the service sector while creating highly paid jobs in the knowledge and ICT based industries. Society and its actors (i.e. NGOs, government, businesses and scientists) have become heavily dependent on ICT.

2010 - 2020 - The affluent employees of the information sector (about two thirds of society) can still afford to continue their ICT driven lifestyle despite the rising costs. Their lifestyle is fundamentally different to that at the beginning of the century. They are becoming increasingly dependent on technology, on rapid access to information, and on instant communication around the globe. (...) The changes in lifestyle and investments in new technologies slowly impact on transportation patterns. For the workers in the information sector it is possible to telework (around two thirds of society). The rise in e-commerce leads to more transportation of goods from out of town distribution centres to the homes of e-commerce shoppers, and less transportation of goods to city centre shops (many of which have been forced to close down due to competition from e-commerce). In many cities where transport is needed, telematics and light rail systems are in full operation. (...) A surprise discovery in cancer-research results in the development and commercial availability of a drug that can extend human life by slowing the ageing process.

Givens 2020 – Ageing: The Ageing trend has been reinforced by the availability of medical treatments for life extension. These have been rapidly taken up and become the 'norm' among the wealthy 'elite'.

2030 – 2040 (...) The life extending drug and natural ageing process are causing noticeable changes in life phases of the 'connected' society. People expect to live longer so their attitude towards life is changing. Emerging aspects of this changing attitude include, longer time spent in education, marriage later on in life and having children later in life. (...) Their lifestyle and the nature of their work enables them to spend part of the year abroad without becoming out of touch with work or social relationships. Teleworking allows them to work from virtually any location in the world providing there is adequate communication infrastructure. Social relationships are no longer local community based but interest based and maintained through the Internet. Conventional energy continues to be replaced by renewables in the EU and particularly in the newer EU member states due to knowledge transfer. (...) The funding into renewables at the beginning of the century gave a big push for this transition to occur by significantly reducing the production costs of renewable energy.

Vision 2050 extracts

(...) The information-based 'connected' society is characterised by a lifestyle where people live away from the city centres and spend much of the year abroad while still able to work and keep in touch with a global network of friends and relatives.

(...) The individuals in the information society make their wealth in the information sector of the economy. Some make use of ICT for both work and leisure. (....)

Due to the revived efforts for Greenhouse gas emission reduction in previous decades there are only a small and declining number of fossil fuel burning utilities in operation. Renewables now supply around 60% of electricity. (...)
Venice Inc.

Venice Inc. has compatibilities with the Big is Beautiful scenario. In box 6.5 we show extracts from the European narratives that could be a context for the Venetian scenario, including the indication of time and also the elements in the final vision of the European scenarios that could match that of the Venetian one.

Box 6.5 - VENICE INC. AND BIG IS BEAUTIFUL

Extracts from the trajectory

2000 – 2010 A series of trends accelerate the number of corporate mergers, alliances and acquisitions throughout Europe and across the globe. (...) By the end of the decade mergers have led to a massive rationalisation of most industries resulting in a few clusters of large, integrated, transnational companies. (...) National governments clearly recognise the ebbing of their power as corporations grow, but they do not stand idly by. Efforts to try to counteract the growing power of BB directly are minimal, both from a lack of success and a lack of will or desire. Rather the governments view their relationship to BB more in terms of partnership.

Givens 2010: Globalisation/liberalisation - Internationalisation of markets, deregulation and privatisation have caused an unprecedented wave of mergers. At the end of the decade there are a few clusters of multinational companies serving each sector of the economy.

2010 – 2020 (...) Merging of the 'forerunners' has run its course and now the main activity occurs in other sectors: tourism, infrastructure and food. (...) Climate scientists report a gradual but confirmed average temperature rise in Europe over the last 20 years. Estimates range from different sources and for different regions but at maximum is just less than one degree and minimum half a degree. This is evidence that human activities are changing the global climate. In Europe there are recurring perturbations to the seasonal patterns but these are generally within natural variability and rarely cause disruption.

Mid-term Sectors: Transport - Patterns in transportation are changing, while some regions are becoming more accessible by public transport (reducing congestion on the roads) others are becoming more isolated from public transport (increasing congestion on the roads). (...) The increasing congestion on the roads makes the use of underground goods transport networks increasingly attractive.

Mid-term Factors: Employment - Mergers have caused job losses and a change in the nature of employment. (...) The European labour force has become truly mobile as barriers to migration have fallen. (...) Environmental degradation - General patterns indicate a decline in environmental quality, but without apparent major repercussions. Government environmental regulations are weak and outdated. BB comply to the bare minimum of socially accepted standards. Natural resources continue to be exploited. Furthermore climate change is beginning to become apparent although impacts to date have been minor.

Economy - The economy is now truly global with free flows of money, capital, and, to a great degree, labour. Dominated by a cluster of multinational and multi-sectoral businesses. Within Europe east west trade relationships. New economic sectors grow as privatisation continues as BB are now responsible for most of the public sector.

2020 – 2030 – (...) Europe has become more and more a region of clusters of protected enclaves – 'Winning regions' - within a nebulous background of urban decay and rural degeneration – 'Losing regions'. (...) The governance of these conglomerations is dominated by businesses and independent of the regional authorities. (...)
2030 - 2040 - (...) Some [BB] influenced by NGOs and tougher regulations from Europe adopt more socially acceptable and environmentally sound practices. (...) 

Vision 2050 extracts

Sector: Transport - The winning regions are adequately served by public transport. (…)

City-Machine

City Machine has compatibilities with both the Big is Beautiful and the Convulsive Changes scenarios. In boxes 6.6 and 6.7 we show extracts from the European narratives that could be a context for the Venetian scenario, including the indication of time and also the elements in the final vision of the European scenarios that could match that of the Venetian one.

Box 6.6 - CITY-MACHINE AND BIG IS BEAUTIFUL

Extracts from the trajectory

2010 - 2020 (...) a number of European-wide banks increase their investment in natural resources at home and abroad. The banks argue that they will ensure the natural resources are protected in order to increase their economic value. (...) the gap between the functioning levels of governance, the EU on one hand and sub-national entities on the other, is too large. Communication is difficult to maintain, resulting in administrative deadlock. The need for an intermediate level of governance, below the dissolved national but above the local level, is considered urgent. (...) There are striking signs of a divide growing in society not just between the employed and the unemployed but between the people who have gained and those who have lost. The losers become increasingly exasperated as the prospects for employment do not improve and the quality of services and the local environment decline. (...) “Gated Communities” […] Walls are built around groups of houses to create communities that can only be entered by residents with smart-card security passes. (...) an attempt to provide security from the rising crime and violence. (...) Climate scientists report a gradual but confirmed average temperature rise in Europe over the last 20 years. Estimates range from different sources and for different regions but at maximum is just less than one degree and minimum half a degree. This is evidence that human activities are changing the global climate. In Europe there are recurring perturbations to the seasonal patterns but these are generally within natural variability and rarely cause disruption.

Givens 2020: Technology and Innovation - Innovations in technology provide protection from violence and crime (for those who can afford it). This is not only bringing about changes in urban structure but also social changes - physically dividing society.

Mid-term Factors: Employment - Mergers have caused job losses and a change in the nature of employment. There are an increasing number of underemployed: people in intermittent employment or settling for jobs below their skill level. (…)

continues next page
2020 – 2030 (...) the problems with the growing centralisation in both the business and public sectors starts to become more apparent. The lack of governmental control over BB has resulted in corruption and incompetence that has until now remained undetected. A series of incidents occur that seriously damage the quality of life in Europe. (...) Gated communities are expanding into gated cities. These are huge fortresses with ever more elaborate technological systems to protect the inhabitants from the criminal and terrorist activities that go on in the surroundings. Within the walls are all the facilities that the residents need. Those who can afford to are fleeing into the protection of these fortified cities at an alarming rate. (...) Europe has become more and more a region of clusters of protected enclaves – ‘Winning regions’ - within a nebulous background of urban decay and rural degeneration – ‘Losing regions’. (...) In both the winning and losing regions there is a backlash against the centralised and Globalised world that has been created. (...) 

Vision 2050 extracts

(...) The social tensions have abated somewhat, but remain, and environmental problems such as the ever increasing impacts of climate change have barely been addressed.

Actors: Business companies - Big Businesses were severely, if not irrecoverably damaged by the series of disasters. Many have broken down into core units of sectoral companies in partnership with the EU government, others dissolved or left the continent.

Factors: Environmental degradation - Environmental quality has declined with varying degrees in different regions. For example, catastrophes such as nuclear radiation contamination have made some areas barely habitable. Pollution in cities and impacts of climate change are experienced throughout the region.

Economy - The impact of major catastrophes has been significant, reducing economic growth to well below the rates seen in the early decades of the century.

Box 6.7 – CITY-MACHINE AND CONVULSIVE CHANGES

Extracts from the trajectory

2000 – 2010 A generally healthy European economy facilitates public willingness to spend money on the environment and make certain lifestyle adjustments. (...) On the regional level the north and northwest of Europe sees increases in precipitation, more frequent and increasingly severe tornadoes, gale force winds, and storms. (...) The coastal zones of the Netherlands, Germany, Ukraine, Russia and Baltic states are frequently inundated, as are many Mediterranean deltas in the south of Europe. As well as coastal flooding, river flooding is an increasingly common event. Many of the natural flood plains have been over-run by development. The floods take the residents of the populated flood plains by surprise. In the milder cases this causes temporary migration of people who return when the floods subside to rebuild homes and reunite communities. In the more severe cases flash flooding results in fatalities and destruction of homes, farmland and infrastructure. (...) When the flood waters subside, they reveal the extent of the environmental destruction. The floods change the shape of the environment drastically. (...) As well as destruction of the natural environment the floods destroy human-made infrastructure. (...) They destroy roads and buildings, bringing transport and business to a halt, resulting in great financial costs. The cost of flood damage, loss of business and the construction of further prevention measures are immense for the countries in the affected regions. (...) Large scale attempts to prevent disasters resulting from such extreme weather events are launched, such as upgrading existing flood defences and establishing new ones in new flood prone regions.
The flood prevention measures comprise a combination of traditional and novel methods. Traditional measures include storm surge barriers and coastal defences such as dikes, as well as measures to control river flow such as flood barriers. More innovative measures include designating large areas of land to be used for the purpose of containing floodwaters. (...) Other alternatives include the construction of canals to divert river water directly to the sea, reducing the pressure on rivers down-stream. Adapted housing and infrastructure that is stable in flood conditions is in development. For example, buildings that can withstand submergence of the lower levels in water, buildings that float as the water level rises (while still anchored in position), and buildings on raised platforms, supported by stilts, are all explored.

*Givens 2010: Climate Change* - Global climate change has occurred rapidly with varying regional impacts in Europe. The north and north west have become wetter, while the south has become dryer. There is an overall temperature rise outside of the range of natural variation and a significant increase in the frequency and severity of extreme weather events.

2010 –2020 (...) The rapid onset of climate change creates a sense of urgency and highlights the need for immediate, further action. Europe’s role as a successful regulatory body is well grounded in the fact that the previous targets were achieved through European regulations. (...) Taxes on commercial energy-use are increased, and the extra revenue is invested into the ongoing development of energy-efficient technologies in industry (...).

Changes in the European climate continue. As average temperatures rise, precipitation patterns become distorted and extreme weather events occur with increasing frequency. (...) In (...) flood prone regions the flood protection systems provide adequate safety for the inhabitants. However the systems need to be constantly improved to keep pace with the changing climate. Storm surge barriers and coastal defences such as dikes, as well as measures to control river flow such as flood barriers are raised and strengthened. Larger areas of land are designated for the purpose of containing floodwaters. (...) The impacts of a changing climate are altering patterns in energy demand. Demand increases in the summer due to the rising need for refrigeration and space cooling. Demand reduces in the winter due to decreasing need for space heating. In addition, energy is needed to pump water out of flood regions though pipelines to dry regions. (...)  

*Given 2020: Role of EU* - The EU leads the world into further rounds of climate change abatement talks. It has become a politically integrated unit that balances top-down control (EU to nations) with multilevel collaboration between national and sub-national level.

Mid-term Factors:

**Employment** - There are regional shifts in employment patterns associated with climate change. Mitigation forces employment in energy-intensive industries to decline and to increase in energy-efficient industries. The environmental impacts of climate change cause regionally distributed decline of agriculture and tourism and subsequent job losses. Adaptation to climate change creates jobs in the development of adaptation methods (a growing industry) and also jobs for the construction industry.*Givens 2030: Despite low reserves, the European Union financially supports countries suffering heavily from the impacts of climate change.*

**Vision 2050 extracts**

(...) The European landscape as seen from a high altitude has the appearance of a wilderness landscape abandoned to the harsh elements of nature, punctuated with safe havens. These safe havens are densely populated and heavily protected from the harsh conditions experienced by the abandoned surroundings. (...) Greenhouse gas emissions have reduced and the K3 target (50% below 1990 levels by 2048) is met before the set date. The news that K3 targets have been met is accompanied by the publishing of scientific evidence that the emissions reductions achieved in Europe and elsewhere will, in coming years, contribute to a reduction and stabilising of the rate of climate change. (...)
Given 2050: Technology/innovation - The knowledge built up over the last decades within Europe about adaptation is providing significant income for the EU boosting economic growth. Technology is also providing solutions for new environmental problems.

Actors: Business companies - The business community has been shaped by the environmental and social developments.

Employment - The nature of employment reflects the transformation of businesses and the economy in general. The service sector dominates. Little traditional industry remains as most has moved to Eastern Europe and elsewhere. New sources of employment have sprung up in 'adaptive' industries.

Environmental degradation - Climate change and human adaptation have irreversibly altered landscapes throughout the continent, most notably where flood defences have been abandoned and the sea allowed to take over and the new desert regions in the south.

6.2 VENICE & EUROPE – STORY 2

Another type of link-story consisted of an integration of both levels of scenarios within the multi-media story presented to the participants in focus groups and actually in all the materials presented during the social research process – see Chapter 4. By interacting with the software the user may check key events in Europe, based on the European scenarios prepared by ICIS at the University of Maastricht and could look at a possible context for Venetian scenarios to develop. This is done at the level of the trajectory, as well as at the level of the final vision. These flashes are presented as “justifications” from a higher scale point of view of the events that succeed in each of the Venetian scenarios leading to each final vision.
7. REFLECTIONS...

1. The project has allowed the exploration of issues related to the science-society interfaces; the design of such an interface implies the deployment of both streams of science (physical and social). These together and by deploying new information technologies may contribute to enhance the gap.

2. The integration of perspectives in the sustainable development debate should in any case be a participatory one by involving the social actors. This is also observed in the scenario building process; social actors' perspectives have to be integrated by using some type of social enquiry.

3. Scenarios imagined and developed by other narrative voices — for instance in a non-academic world — would most probably feature not only different final images but would also address different concerns or focus on particular aspects of the evolution of the city.

4. Scenarios developed through a consensual process among different people would undoubtedly be less contrasting and more narrowly clustered around the current situation than the scenarios presented here. However, the way in which scenarios were constructed provided an adequate space for discussion and brought about perspectives from the different actors.

5. Scenarios are useful to initiate a discussion of the future in terms of actions to be undertaken, actors' roles and envisaged socio-economic and environmental impacts for choosing one path to the future or another.

6. The people who participated in the social research process envisaged a sustainable vision of Venice. There is a need to explore ways to achieve sustainability, which coincides with 'saving Venice'. Innovation and diversification of activities are not seen incompatible with the preservation of the city, quite the contrary. However, the most important message that emerged from this process is that the debate about sustainable Venice should involve all.

7. Through this experience researchers and the participants in the social research process have been engaged on identifying and establishing a common platform (language and understanding) of the problématiques in Venice. That encompassed a reciprocal process of exchange between researchers and participants: on one hand the appreciation of the assumptions underlying expert information, and the conditions of their application at the resolution of the problems of concern, and on the other hand, sharing of the arguments and justifications brought by the different social actors to the debate. This makes possible the exploration of alternative concerted solutions given the multiple perspectives that embody the process of planning the 'futures' for a city like Venice.
This research project has brought about many reflections on quality of policy and decision-making in Europe and on the new democratic processes that are developing. The former concerns the need for quality assurance of decision-making processes by the community, and the latter concerns new forms of dialogue and bringing the civil society to the centres of decision. This may be implemented through a similar process to the one explored by the VISIONS project.

Finally, we leave you with this opinion from a thirteen-year-old child of focus group 3 about the future and the need for knowledge to address the problematiques we face nowadays in Venice and Europe...

"...la mia [visione] si avvicina a questa [Cyberia]... perché non ci sono soluzioni buone (...) non puoi risolvere questo problema [di Venezia] in un senso positivo. Dovremmo avere più conoscenze, magari con la collaborazione di tutti, però un giorno ci si arriverà!"

"...my [vision] is close to this [Cyberia]... because there are no good solutions (...) you cannot solve this problem [of Venice] in positive ways. We must acquire more knowledge, probably with the collaboration of all, one day we will get there!"
REFERENCES


Rothmans, J. et al. (September 2000) “Integrated Visions for a Sustainable Europe – from Storylines to Scenarios” Report. ICIS, University of Maastricht NL.


CARTOON PICTURES REFERENCES


N.B. All these images have COPYRIGHT © CASTERMAN, 1780-2001.

http://www.casterman.be
APPENDIX 1: Telling The VISIONS Stories In Several Flavours - Slides, “Press Articles”, Video clips Screenplays, etc.

The VISIONS Project (Integrated Visions for a Sustainable Europe) was a three-year project which started in February 1998. It was funded by DG RTD of the European Commission through the 4th Framework Programme, Theme 4 Human Dimensions of Environmental Change (Contract no.: ENV4-CT97-0462).

Here we describe the activities of the JRC team within the VISIONS project. During the project a social research activity has been planned, prepared and conducted in Venice, Italy. This included in-depth interviews and focus groups. During both interviews and group sessions, several types of materials introduced the participants to the discussion topics. In this section “press articles”, stills of slides and story board and plot of the multimedia materials are presented. The theoretical background of the work has been described in the report's Chapter 4 - page 44 of the REPORT section. Further material is presented in the CD-ROM.
### TABLE OF CONTENTS

- **Bullet Point Sheets: Material Supplied to the Participants to the First Round of In-Depth Interviews** - In Italian and in English. A.4-A.14
- **"Press Articles" : Material Supplied to the Participants to the Second Round of In-Depth Interviews** - In Italian only. A.15-A.28
- **Powerpoint Slides: Material Presented to the Focus Groups 1 and 2** - In Italian and in English. A.29-A.59
- **Bullet Point Sheets: Material Supplied to the Focus Groups 1 and 2** - In Italian and in English. A.60-A.62
- **Video Clips’ Screenplays: Material Used to Produce Multi-Media Materials Presented to the Focus Groups 3 and 4** - In Italian and in English. A.63-A.80
QUATTRO SCENARI PER VENEZIA

Si sono identificati quattro scenari alternativi (o "fotografie" del futuro) per Venezia. Essi sono riferiti essenzialmente al centro storico ed all'estuario, piuttosto che alla "terraferma". Questi scenari rappresentano dei possibili futuri per Venezia; futuri che possono realizzarsi grazie al dispiegarsi di catene di eventi che non saranno esaminati in maniera approfondita in questo documento. In questa sede è sufficiente dire che sono state identificate (sulla base delle informazioni disponibili) le forze, a livello locale, portatrici di cambiamento (tab. 1).

Questi fattori, interagendo con altri su scala superiore (regionale, nazionale, globale), influenzano fortemente il cammino di Venezia tra i possibili futuri alternativi.

Gli scenari non sono delle vere e proprie "profezie"; piuttosto, rappresentano un possibile ventaglio di situazioni per il futuro di Venezia. Indipendentemente dai particolari, questi scenari hanno il compito di sottolineare l'essenza del problema e di dare dei suggerimenti sul tipo di mondo di cui sono indicatori.

FOUR SCENARIOS FOR VENICE

Four alternative images (or snapshots of the future) have been identified for Venice. They refer basically to the historical centre and the estuary, more than to the mainland area of Venice ("terraferma").

Those images are intended as plausible future states of Venice, states coming into being through the unfolding of causal and casual chains of events that will not be analyzed in this report. Here it is sufficient to say that the local driving forces have been identified (on the basis of the available information) as those listed in Table I. Those drivers, in interaction with higher-scale (regional, national, global) forces, strongly influence the branching of Venice's historical trajectory into alternative futures.

The images are not specific predictions; rather, they symbolize possible classes of situations for Venice. Quite independently of the details, they dramatize the inner significance of the situation and hint at the kind of world within which they belong.

Material supplied to the participants of the first round of in-depth interviews
Table 1: Current (local) driving forces

- **Dominance of the tertiary sector** in the economy (in the historical centre and the estuary)
  - tourism
  - commerce
  - public administration and politics
  - cultural activities

- **Environmental degradation**
  - pollution (water and air; acid corrosion)
  - high tides/subsiding
  - accident hazard

- **Demographic decline** (emigration from historical centre and low birth rate)

- **High and democratic participation**

- **Influence of industrial zone of Marghera** (now economically stagnated, with increasing unemployment; polluting industry; heavy ship traffic to Porto Marghera generates strong waves; increasing emphasis on tertiary activities)

- **Increasing commuting distances and volumes**

- **Heavy motorboat traffic**

- **History of Venice** (the ‘myth of Venice’)

---

Tabella 1: Forze Portatrici di Cambiamento a Livello Locale

- **Predominio del terziario** (nel centro storico e nella zona dell’estuario)
  - turismo
  - commercio
  - pubblica amministrazione
  - attività culturali

- **Degrado ambientale**
  - inquinamento (aria ed acqua; corrosione provocata da acidi)
  - acqua alta/erosione delle fondamenta dei palazzi
  - danni all’ambiente provocati da incidenti

- **Crollo demografico** (provocato dall’emigrazione dal centro storico e dall’abbassamento del tasso di natalità)

- **Alta partecipazione di tipo civico**

- **Influenza della zona industriale di Marghera** (attualmente in fase di stagnazione economica, con un tasso di disoccupazione crescente; industrie fortemente inquinanti; intenso traffico marittimo con conseguente forte moto ondoso; enfasi crescente sul terziario)

- **Aumento del traffico pendolare** (sia per ciò che riguarda il volume che per le distanze)

- **Intenso traffico di natanti**

- **Trattamento delle acque insufficiente**. Viene trattato solamente il 62% degli scarichi (ma gli scarichi domestici del centro storico non vengono trattati provocando così inquinamento e miasmi)

- **Storia di Venezia** (il “mito” di Venezia)

---

Material supplied to the participants of the first round of in-depth interviews

VISIONS - Adventures into the future
SUSTAINABLE LIFE

The original morphology of the lagoon has been restored. Ecomanagement of high tides through restoration of the original hydraulic system and its behavior is highly successful. Fisheries and aquatic life thrive.

The application of rigorous pollution control and ecological principles has resulted in a marked improvement of the health and integrity of the aquatic ecosystem.

People have learned to live with the high tides and the foundations and cellars have been treated to minimize damages due to immersion. The base level of the San Marco piazza and of some small strategic areas has been raised.

Tourism flow is regulated through licensing of hotels and restaurants, taking into account the city carrying capacity for the activity, and the conditions required to improve the quality of life of the local population.

But tourism is not the only, nor even the overwhelming, source of income and jobs. A variety of cyberjobs now provide occupation, highly creative and with low environmental impact. Venice is now a sort of “cultural Silicon valley” specialized in the use of information technologies for historical heritage-based cultural activities. The city trades now its cultural treasures in highly sophisticated virtual reality packages, much appreciated at the national and international levels, and Venice is flourishing as a world-class learning center for “cultural informatics”.

Material supplied to the participants of the first round of in-depth interviews
VENEZIA SOSTENIBILE

La morfologia originale della laguna è stata recuperata. Il controllo dell'acqua alta attraverso il recupero dell'originale sistema idrologico è pienamente soddisfacente. La popolazione ittica e la fauna acquatica prosperano.

L'applicazione di rigidi controlli anti-inquinamento e di metodologie ecologiche ha portato ad un netto miglioramento dello stato di salute dell'ecosistema acquatico.

Le persone hanno imparato a convivere con l'acqua alta e le fondamenta e le cantine sono state trattate la fine di ridurre al minimo i danni provocati dalla prolungata immersione in acqua. Il livello del suolo in Piazza S. Marco ed in altre piccole aree strategiche è stato elevato.

Il flusso dei turisti viene regolato attraverso la concessione di licenze ad alberghieri e ristoratori, tenendo conto sia della capacità della città per ogni attività che delle condizioni necessarie al miglioramento degli standard di vita dei cittadini.

Ma il turismo non solo non è l'unica fonte di reddito e di occupazione, ma non e neanche la più importante. L'occupazione è assorbita da una gamma di "cyber" lavori, che permettono la creazione di lavori altamente creativi e a ridotto impatto ambientale.

Venezia si è trasformata in una sorta di "Silicon Valley" culturale, specializzata nella produzione ed applicazione di tecnologie informatiche per lo sviluppo di attività legate al retaggio storico locale.

La città commercia ora il suo patrimonio culturale in software di realtà virtuale altamente sofisticati, molto apprezzati sia in Italia che all'estero, e Venezia sta prosperando come centro di "informatica culturale" di livello mondiale.
CITY-MACHINE

Venice has become a tangible paradigm of the application of the engineer approach to complex hazards. Big barriers cover the entrances to the lagoon to protect the city against flooding. Additional barriers cover the horizon, giving Venice and the lagoon the aspect of a fortified city under siege. A continuous wall around the city system is under construction.

Environmental impact of the works (including water flowing around the barriers, ecological impacts of the sinking of huge amounts of cement in the water, and ecological impacts of the changed hydrological regime) have triggered new engineering solutions, each solving specific problems but generating additional ones. Bigger, more complex, and more expensive systems are being built. Powerful underwater propellers are in place, implemented to redesign and maintain the circulation of water in the lagoon.

Small floods have been effectively stopped, but this generated a false sense of security. The first large flood that the barriers failed to prevent had catastrophic consequences, taking a toll of lives and damages to the buildings and the city's cultural heritage. While efficient early warning systems for high tides were in place, the elapsed time between the unexpected failure of the barriers and the flood proved to be too short for effective action.

The system became more and more dependent on human control and the economic and environmental cost of potential failure is now very high. As a consequence, rigid operational controls have been established, and more people are employed in maintenance activities.

The visual attraction of the city has been greatly reduced because of the visual impact of the ubiquitous engineering works. Initially, the works themselves became a tourist attraction. However, this was short-lived, and in the longer-term tourists were turned off in a much larger proportion. The power of Venice as a magnet for tourism has largely vanished.

As the economy of Venice dwindled, it became much more onerous to pay for the barriers and the maintenance of the water works.

The whole city slowly became a huge accident waiting to happen, and activities are now rigidly regimented. Life in the city becomes more and more like living inside a gigantic engineering work. For a large fraction of the population, life has now a purpose: to keep the machine running.
VENEZIA METROPOLIS

Venezia è diventata un esempio tangibile dell'applicazione dell'ingegneria a problemi ambientali complessi. Grandi barriere bloccano gli ingressi alla laguna per proteggere la città dalle inondazioni. Barriere addizionali nascondono l'orizzonte, dando a Venezia ed alla laguna, l'aspetto di una città sotto assedio. Un muro ininterrotto intorno alla città è attualmente in costruzione.

L'impatto ambientale di queste opere (tra cui il flusso delle correnti intorno alle barriere, l'impatto ecologico provocato dall'affondamento di enormi quantità di cemento nella laguna e dal mutato regime idrologico) hanno dato il via a nuove soluzioni ingegneristiche, ognuna destinata a risolvere problemi specifici, ma, nel contempo, creandone di nuovi. Vengono costruiti macchinari sempre più grandi, sempre più complessi e sempre più costosi. Potenti motori sottomarini sono stati installati per ricostituire e mantenere la circolazione dell'acqua nella laguna.

Le piccole inondazioni sono state effettivamente bloccate, ma ciò ha provocato un senso di sicurezza illusorio. La prima grande inondazione che le barriere non riuscirono a prevenire ebbe conseguenze catastrofiche, esigendo un forte pedaggio in termini di vite, danni agli edifici ed al patrimonio culturale della città. Sono stati installati sistemi di allertamento precoce per l'acqua alta. Tuttavia, il tempo intercorso tra l'inaspettato mancato funzionamento delle barriere e l'inondazione si è rivelato troppo breve per poter permettere una reazione efficace.

Il sistema è diventato sempre più dipendente dal controllo umano e i costi ambientali ed economici di un potenziale fallimento sono attualmente altissimi. Di conseguenza, è stato stabilito un rigido sistema di controlli ed un sempre crescente numero di persone è impiegato in attività di manutenzione.

Il fascino della città è stato fortemente ridotto dalla presenza delle opere ingegneristiche; anche se, inizialmente, esse stesse erano state un fattore di attrazione turistica. Comunque, questa era stata solamente una fase transitoria e nel medio periodo

La loro presenza ha provocato una forte emorragia nel flusso dei visitatori. La potenzialità di Venezia come attrazione turistica è in gran parte svana.

A causa della contrazione dell'economia locale, la manutenzione delle opere idriche e delle barriere è diventato sempre più costosa. L'intera città si è lentamente trasformata in un'enorme bomba ad orologeria sul punto di esplodere, e i ritmi di vita sono fortemente irregimentati.

Ora in città si vive come dentro un gigantesco meccanismo. Per gran parte della popolazione vi è ora un unico scopo: far sì che le macchine continuino a funzionare.
GOTHAM CITY

Living conditions have deteriorated very much; air and water pollution have increased to levels that significantly affect human and ecosystem health. The fishing industry is closing down because of reduction and contamination of fish populations. The high tides are very frequent and dampness is overspread in most buildings.

Unprecedented levels and the historical centre is now populated mainly by the jobless and the outcast. Tourist attractiveness has diminished; the flow of tourists has trickled down to a small fraction of late 20th century values, leading to a dwindling of the economy.

In an effort to salvage part of Venice's cultural heritage, sculptures and paintings are moved to the mainland. A "New Venice" is founded in an empty area in the mainland, copying the architectural styles of the historical center, while the buildings in the original Venice are being corroded by acidic air and prolonged immersion underwater.

A slow but continuous process of environmental, economic and social degradation is still taking place.
VENEZIA DECADUTA

Le condizioni di vita si sono deteriorate moltissimo; l’inquinamento di aria ed acqua ha raggiunto livelli tali da danneggiare seriamente sia gli esseri umani che l’ecosistema.

L’industria della pesca è sull’orlo della chiusura a causa della riduzione e della contaminazione della popolazione ittica. Il fenomeno dell’acqua alta è molto frequente e l’umidità è largamente diffusa nella maggior parte degli edifici.

Lo spopolamento del centro storico e della laguna ha registrato livelli mai toccati in precedenza e attualmente il centro storico è abitato prevalentemente da disoccupati ed emarginati.

Il turismo è fortemente diminuito; il flusso di turisti è precipitato ad una piccola frazione di quello che era alla fine del 20° secolo, provocando una contrazione dell’economia locale.

Nello sforzo di salvare almeno una parte del patrimonio culturale di Venezia, dipinti e sculture sono stati trasferiti sulla terraferma. Una “Nuova Venezia” è stata costruita sulla terraferma, imitando lo stile architettonico del centro storico, mentre gli edifici originali vengono corrosi dagli acidi presenti nell’aria e dalla prolungata immersione nell’acqua inquinata. Si sta verificando un lento ma continuo processo di degrado.
VENICE INC.

Tourism has been growing steadily and it generates unprecedented profits; Venice is now one of the four most important tourist destinations of the world. Three large transnational corporations dominate the economy and city life and provide most of the jobs. Venice became a "cultural park" and "museum city" for international tourism.

New cultural events are implemented to attract more tourism. The Carnival takes place four times a year now. People are dressed in period costumes. Life has become highly ritualized.

Pollution has been efficiently controlled, through the investment of part of the huge profits from the tourism/cultural industry. The high tides become an additional tourist attraction. New ways of using the floods as tourist shows are invented and implemented.

The local resident population by night is reduced to people working in the restaurants, hotels, and essential services, and some security staff. Venetians are undetectable among the masses of tourists. In daytime, commercial and cultural activities peak and demand more operators.

Daily life in the city is now a parody (for tourists) of "la serenissima". The city is a setting in which the whole local population (commuting daily from the mainland) performs a gigantic operatic performance.

Venice is not a city anymore, but an enormous theatrical stage.
VENEZIA S.p.A.

Il turismo registra una crescita costante e genera un flusso di profitti mai registrati precedentemente; Venezia è ora una delle quattro maggiori attrazioni turistiche del mondo. Tre grandi multinazionali hanno il predominio dell'economia, oltre che della vita della città, e assorbino la maggior parte dell'occupazione. Venezia è diventata un "parco culturale" e una "città-museo" destinata al turismo internazionale.

Vengono organizzati sempre nuovi eventi culturali per attrarre ancora più turisti. Il Carnevale cade ora quattro volte all'anno. Le persone girano vestite con costumi dell'epoca. La vita è diventata fortemente ritualizzata.

L'inquinamento è stato efficientemente controllato, grazie all'investimento di una parte degli enormi profitti derivanti dall'industria del turismo. Il fenomeno dell'acqua alta è diventato un'ulteriore attrazione turistica. Nuove idee per utilizzare le marea come attrazioni turistiche sono state inventate e poste in essere.

Di notte, la popolazione locale è limitata alle persone che lavorano nei ristoranti, negli alberghi, nei servizi di sicurezza ed in generale nei servizi essenziali. I Veneziani sono diventati invisibili in mezzo alla massa dei turisti. Di giorno, le attività commerciali e culturali raggiungono l'apice e richiedono un numero sempre maggiore di operatori.

La vita quotidiana è ormai diventata una rappresentazione (per turisti) dell'epoca della Serenissima. La città è diventata un set in cui l'intera popolazione (che si sposta quotidianamente dalla terraferma) recita un kolossal.
La fine della Serenissima?
La città condannata trasloca i suoi tesori sulla terraferma
Nello sforzo di salvare almeno una parte del patrimonio culturale di Venezia, dipinti e sculture sono stati trasferiti sulla terraferma. Una "Nuova Venezia" è stata costruita sulla terraferma, imitando lo stile architettonico del centro storico, mentre gli edifici originali vengono corossi dagli acidi presenti nell'aria e dalla prolungata immersione nell'acqua inquinata. Si sta verificando un lento ma continuo processo di degrado.

*LA LAGUNA—ANGELO O DEMONIO?*

In origine nata dalla mescolanza delle maree adriatiche con le acque dei fiumi alpini, la Laguna è sempre stata un elemento fondamentale alla sopravvivenza di Venezia. I suoi banchi, le paludi ed i canali rappresentano un habitat unico per la fauna, marina e non. La Laguna ha svolto la duplice funzione di barriera protettiva e di sistema fognario naturale, visto che le maree refluiscono lungo i canali cittadini due volte al giorno. Chiaramente, ci vuole un'attenzione continua affinché non vengano causati squilibri che possano minacciare l'esistenza stessa di Venezia. Quando l'effetto delle alte maree si combina con quello dei forti venti che a volte soffiano da sud e da est, il livello delle acque cresce e la città viene inondata. Alcuni fattori, come l'escavazione dei canali nel 20° secolo, l'eccessivo sfruttamento delle falde acquifere in terraferma e lo sprofondamento geologico del bacino del fiume Po, hanno contribuito...
secoli 15° e 16° il Magistrato alle acque promuoveva leggi per modificare il corso di alcuni fiumi e, in generale, per salvaguardare l'ambiente urbano.

IL MITO E LA DECADENZA...
Il "Mito di Venezia" si traduce in un senso di onnipotenza: la sensazione che, in qualche modo, i problemi provocati dall'inquinamento e dal traffico nautico troveranno sempre una soluzione. Di conseguenza, non vengono intraprese azioni convincenti per il controllo di questi processi. Il risultato è che si registra un aumento del traffico e del degrado ambientale direttamente proporzionale al

EUROPA, anni 20: A causa dell'abbandono delle città da parte delle classi privilegiate, dirette verso zone "incontaminate", si è innescato un processo di decadenza urbana. I cambiamenti climatici continuano ad esercitare la loro influenza...

calo del turismo.
La maggioranza delle risorse finanziarie disponibili per il recupero e restauro della città vengono sottoutilizzate o impiegate per il pagamento di tangenti, in un regime di corruzione dilagante.

Inoltre, a causa dei lunghi tempi necessari per compiere il percorso casa-lavoro, molti

EUROPA, ultimi 50 anni: La transizione da bits a bytes crea anche un grande bacino di disoccupati. Le disparità salariali aumentano e ha inizio un processo di polarizzazione della società tra coloro che hanno accesso alla "conoscenza" (il settore dominante) e coloro che ne sono al di fuori (gli esclusi) ...

residenti lasciano il centro città a vantaggio della terraferma.
Comunque, a causa del declino del turismo, l'occupazione in centro decresce. La forte crescita industriale (insieme alla passività dimostrata dalla popolazione) porta ad un degrado ambientale sempre maggiore e ad una conseguente diminuzione del turismo (sia in volume
che in qualità). Il futuro è ormai strettamente vincolato all'industria, in quanto attività economica di maggiore spessore.

**Diagramma: Evoluzione 2000 a 2050**

**Benvenuti a Las Vegas, anzi a Venezia. Festa per la Serenissima in Nevada — copia da 3000 miliardi**


La Venezia numero 2, che clonava il ponte di Rialto facendolo passare sopra un finto Canal Grande pullulante di gondole, piazza San Marco con il suo campanile ed il Palazzo dei Dogi, provocò la rabbia dell'allora sindaco di Venezia, Massimo Cacciari: "E' un uso violento di Venezia, della sua storia, delle sue tradizioni, da cui la città non riceve che danni. E' un'americanata che costa 3000 miliardi e che prostituisce Venezia rendendola una sorta di Luna-Park, strumentalizzandola a fini esclusivamente commerciali." All'epoca, il miliardario statunitense si era offerto di risarcire la città di Venezia con delle forti somme di denaro. Adesso, Venezia numero 3 e' il tentativo disperato di salvare ciò che resta di una delle città più belle del mondo, un patrimonio storico e culturale dell'intera umanità.
Le condizioni di vita si sono deteriorate moltissimo; l'inquinamento di aria ed acqua ha raggiunto livelli tali da danneggiare seriamente sia gli esseri umani che l'ecosistema.

FORZE CHE INFLUENZANO LA SITUAZIONE LOCALE
- Degrado ambientale (inquinamento, acqua alta e rischio di disastri)
- Declino demografico
- Crescente influenza della zona industriale di Marghera
- Incremento del traffico pendolare, sia per distanza che per volume
- Mito di Venezia (che si traduce in inazione)

L'industria della pesca è sull'orlo della chiusura a causa della riduzione e della contaminazione della popolazione ippica. Il fenomeno dell'acqua alta è molto frequente e l'umidità largamente diffusa nella maggior parte degli edifici. Lo spopolamento del centro storico e della laguna ha registrato livelli mai toccati in precedenza e attualmente il centro storico è abitato prevalentemente da disoccupati ed emarginati.

Il turismo è fortemente diminuito; il flusso di turisti precipitato ad una piccola frazione di quello che era alla fine del 20° secolo, provocando una contrazione dell'economia locale.

LA NUOVA VENEZIA...

Nello sforzo di salvare almeno una parte del patrimonio culturale di Venezia, dipinti e sculture sono stati trasferiti sulla terraferma. Una "Nuova Venezia" è stata costruita sulla terraferma, imitando lo stile architettonico del centro storico, mentre gli edifici originali vengono corrosi dagli acidi presenti nell'aria e dalla prolungata immersione nell'acqua inquinata. Si sta verificando un lento ma continuo processo di degrado.

Venezia 3: Nello sforzo di salvare almeno una parte del patrimonio culturale di Venezia, dipinti e sculture sono stati trasferiti sulla terraferma.
Un tuffo nelle rovine de "La Serenissima"

Contatti la sua agenzia viaggi

Viaggi favolosi
CYBERIA, ANZI VENEZIA, 2050...

Scopri i miti del passato con le tecnologie del futuro...

"La città ridà se stessa tutti i giorni: ogni mattina la popolazione si risveglia tra lenzuola fresche, si lava con saponette appena sgusciate dall'involvero, indossa vestaglia nuove fiammanti, estrae dal più perfezionato frigorifero barattoli di latta ancora intonsi, ascoltando le ultime filastrocche dall'ultimo modello di apparecchio". Italo Calvino: Le città invisibili

Venizia si è trasformata in una sorta di "Silicon Valley" culturale, specializzata nella produzione ed applicazione di tecnologie informatiche per lo sviluppo di attività legate al retaggio storico locale. La città commercia ora il suo patrimonio culturale in software di realtà virtuale altamente sofisticati, molto apprezzati sia in Italia che all'estero, e Venezia sta prosperando come centro di "informatica culturale" di livello mondiale.

INQUINAMENTO
La morfologia della laguna è stata recuperata. Il controllo dell'acqua alta attraverso il recupero del sistema idrologico è pienamente soddisfacente. La popolazione ittica e la fauna acquatica prosperano.

L'applicazione di rigidi controlli anti-inquinamento e di metodologie ecologiche ha portato ad un netto miglioramento dello stato di salute dell'ecosistema acquatico.

Le persone hanno imparato a convivere con l'acqua alta e le fondamente e le cantine sono state trattate la fine di ridurre al minimo i danni provocati dalla prolungata immersione in acqua. Il livello del suolo in Piazza S. Marco ed in altre piccole aree strategiche è stato elevato.

TURISMO
Il flusso dei turisti viene regolato attraverso la concessione di licenze ad albergatori e ristoratori, tenendo conto sia della capacità della città per ogni attività sia delle condizioni necessarie al miglioramento degli standard di vita dei cittadini.

OCCUPAZIONE CYBER
Ma il turismo non solo non è l'unica fonte di reddito e di occupazione, ma non è neanche la più importante. L'occupazione è assorbita da una gamma di "cyber-lavori", che permettono la creazione di prodotti altamente creativi e a ridotto impatto ambientale.
ALTRO TURISMO

VENZIA... CYBERIA, GLI ULTIMI 50 ANNI

Spuini 2000-2050, MEZZO SECOLO IN EUROPA
Un mondo in cui la tecnologia basata sulla comunicazione e sull'informazione rivoluziona l'Europa intera...
Grandi innovazioni in alcuni settori chiave - tecnologie fotovoltaiche per la produzione di energia elettrica, tecnologia a celle di combustibile per il settore dei trasporti, produzione di nuovi medicinali e campo farmaceutico - accelerano la transizione verso una nuova era.
Il settore della conoscenza risulta essere un forte motore trainante e dei sistemi esperti molto sofisticati vengono utilizzati nella risoluzione di problemi finanziari. Le banche dati diventano sempre più importanti ed il loro diffondersi capillare porta alla nascita di una nuova disciplina basata sulla conoscenza, all'interno del settore terziario... Il telelavoro cresce in maniera significativa...I mezzi di trasporto vengono utilizzati molto di più per il tempo libero che per gli spostamenti lavorativi, permettendo così un decongestionamento del traffico...

APPROFITTANDO DELLE OPPORTUNITÀ DELLA SOCIETÀ DELL'INFORMAZIONE

Decisad affrontare i crescenti problemi che affliggono la città e traendo forza in questa loro decisione dal mito di Venezia (le cui fondamenta si basano sulla convinzione che i Veneziani possano affrontare vittoriosamente qualsiasi problema), i cittadini di Venezia si alleano con i rappresentanti del potere politico e danno il via ad una serie di iniziative basate su processi partecipativi per decidere il futuro della città. Una delle priorità su cui c'è maggiore accordo è la

FORSACHE INFLUENZANO LA SITUAZIONE LOCALE
- A livello economico, predominio del terziario (specialmente turismo, attività culturali e tecnologia)
- Degrado ambientale (il processo è stato completamente rovesciato)
- Elevata partecipazione dei cittadini ai processi democratici
- Storia di Venezia (il "mito" di Venezia)

Il turismo viene incoraggiato ma, contemporaneamente, attinentemente regolato, mentre altre attività di tipo culturale vengono implementate.
Vengono messi in atto severi controlli sulle attività inquinanti, rendendo così Venezia più attraente per i suoi abitanti e per un turismo caratterizzato volontà di consolidare l'economia locale intorno al terziario; comunque, la priorità considerata di maggiore importanza è la qualità della vita a Venezia.
In una prima fase, il

APRILE 2050. ANNO XXX, N. 2

Material supplied to the participants of the first round of in-depth interviews
ALTRO TURISMO

VENEZIA... CYBERIA, GLI ULTIMI 50 ANNI

dei redditi derivanti dal settore. 
Viene anche fatto uno sforzo concreto per rivitalizzare e riproporre delle attività tradizionali veneziane come la pesca (non industriale) e l'artigianato. 
Sistemi per la gestione dell'ambiente vengono utilizzati in maniera sempre maggiore combinando piccole opere ingegneristiche e l'applicazione di principi ecologici agli ecosistemi urbano ed ambientale di Venezia. 
In parte finanziata dai profitti del settore turistico, ma in misura sempre maggiore autonoma, si registra una diffusa crescita di tecnologie legate all'informazione.

VENEZIA CREATIVA

"demarkializzazione" di una considerevole parte della domanda turistica. 
Si ha così la nascita di una nuova economia di stampo cibernetico che permette un incremento del tasso di occupazione, oltreché del reddito, ed una riduzione dei problemi legati al pendolarismo (poiché molte persone possono usufruire dei vantaggi del televolontariato).

ITINERARI: LA SERENISSIMA

Per una visita "reale" alla mitica Venezia.
Prenota qui le tue vacanze...

Proposta da Mythic Travellers

Material supplied to the participants of the second round of in-depth interviews
ALTRO TURISMO

VENezia... CYBERia, GLI Ultimi 50 anni

Il miglioramento della qualità della vita e dell'ambiente contribuisce in maniera determinata ad arrestare il calo demografico. I processi partecipativi e le interazioni di rete hanno permesso la nascita di un forte senso di comunità, evidenziatosi nel recupero di valori umani basilari. Inoltre, questo esperimento di carattere sociale è stato di ispirazione per molte altre città in diverse parti del mondo.

IN EUROPA

Nei primi anni di questo secolo si crea un grande bacino di disoccupati. Le disparità salariali aumentano ed ha inizio un processo di polarizzazione della società tra coloro che hanno accesso alla "conoscenza" (il settore dominante) e coloro che ne sono al di fuori (gli esclusi). Gradualmente si raggiunge un equilibrio dal momento che gli esclusi riescono a svolgere un ruolo di primaria importanza all'interno della società, pur non integrandosi. La loro autosufficienza appare diversa da quella del settore dominante, ma non per questo meno importante, ed il loro spirito di comunità rappresenta una forza ormai assente in una società in cui i bisogni individuali sono diventati predominanti.

Evoluzione 2000 a 2050

Material supplied to the participants of the first round of in-depth interviews
POWERPOINT® SLIDE SHOW

VISIONS FOR VENICE 2050...

VISIONI DI VENEZIA ANNO 2050...

Material showed to the participants of focus groups 1 and 2
ABOUT SCENARIOS...

WHAT IS A SCENARIO?

A SCENARIO is a possible course of events leading to a resulting state of the world.

SCENARIOS are neither PREDICTIONS nor FORECASTS.

COSA È UNO SCENARIO?

Uno SCENARIO è un possibile corso di eventi che porta ad una IMMAGINE del futuro.

Gli SCENARI non sono né PREDIZIONI né PREVISIONI.

Material showed to the participants of focus groups 1 and 2
ABOUT SCENARIOS...

WHAT IS A SCENARIO?

- Each scenario is an alternative image of how the future might unfold.
- Scenarios help in the assessment of future developments in complex systems (e.g. a city or a region) that are either inherently unpredictable, or that have high scientific uncertainties.
- In all stages of the scenario-building process, uncertainties of different nature are encountered.
- Scenarios may be in the form of narratives (qualitative).
- Scenarios are not value free: they embody the perspectives of their creators.

COSA È UNO SCENARIO?

- Ogni scenario porta ad un'immagine alternativa di come il futuro potrebbe svelarsi.
- Un insieme di scenari aiuta a CAPIRE possibili sviluppi di sistemi complessi, come una città, una regione, ecc.
- Gli scenari spesso si sviluppano avvolti in grandi incertezze.
- Gli scenari spesso sono comunicati per mezzo di narrazione ed immagini grafiche.
- Gli scenari rispecchiano i valori e le prospettive di chi li ha creati.

Material showed to the participants of focus groups 1 and 2
ABOUT SCENARIOS...

WHAT IS A SCENARIO?

- Driving Forces
- Course of Events
- Image of the Future

COSA È UNO SCENARIO?

- Forze Predominanti
- Corso Di Eventi
- Immagini

anatomia di uno scenario

Material showed to the participants of focus groups 1 and 2
VENICE VISIONS FOR 2050...

VISIONI DI VENEZIA, 2050

Marco Polo tells Kublai Kan...

Material showed to the participants of focus groups 1 and 2
GOTHAM CITY - VISION

Tourism has trickled down to a small fraction.

Living conditions have deteriorated very much.
Air and water pollution significantly affect human and ecosystem health.
Traditional activities close down.
Building decay.

Emigration from the historical centre has reached unprecedented levels.

LA CITTÀ FANTASMA - VISIONE

Il turismo è fortunato di mancato.
Le condizioni di vita si sono deteriorate moltissimo.
Livelli d’inquinamento dell’aria e acqua danneggiano seriamente l’ecosistema e l’ambiente umano.
Le industrie tradizionali sono state chiuse.

Lo spopolamento del centro storico e della laguna ha registrato livelli mai toccati in precedenza.

VISIONS - Adventures into the future

Material showed to the participants of focus groups 1 and 2.
ABOUT SCENARIOS...

GOTHAM CITY - VISION

THE HIGH TIDES ARE VERY FREQUENT.

IN AN EFFORT TO SALVAGE PART OF
VENICE'S CULTURAL HERITAGE.

LA CITTÀ FANTASMA - VISIONE

IL FENOMENO DELL'ACQUA ALTA È MOLTO FREQUENTE.

NELLO SFORZO DI SALVARE ALMENO UNA
PARTE DEL PATRIMONIO CULTURALE DI VENEZIA,
DICONTI E SCULTURE SONO
STATI TRASFERITI SULLA TERRAFERMA.
GOTHAM CITY

A 'NEW VENICE IS FOUNDED IN THE MAINLAND COPYING THE ARCHITECTURAL STYLES OF THE HISTORICAL CENTRE.'
GOTHAM CITY

GOTHAM CITY - VISION

Gli edifici originali vengono corrosi dagli acidi presenti nell'aria e dalla prolungata immersione nell'acqua inquinata.

LA CITTÀ FANTASMA - VISIONE

Gli edifici originali vengono corrosi dagli acidi presenti nell'aria e dalla prolungata immersione nell'acqua inquinata.

Material showed to the participants of focus groups 1 and 2
**Gotham City**

**Dominant local drivers**
- Environmental degradation (pollution, high tides/subsiding, and accident hazard).
- Demographic decline.
- Influence of the industrial zone of Marghera.
- Increasing commuting distances and volumes.
- The Myth of Venice (that manifests in inaction).

**La Città Fantasma**

**Forze che influenzano la situazione locale**
- Degrado ambientale (inquinamento, acqua alta e rischio di disastri)
- Declino demografico
- Crescita influenza della zona industriale di Marghera
- Incremento del traffico pendolare, sia per distanza che per volume
- Mito di Venezia (che si traduce in inazione)

Material showed to the participants of focus groups 1 and 2
GOTHAM CITY

GOTHAM CITY - HOW COME THIS SCENARIO...?


LA CITTA' FANTASMA - COME MAI QUESTO SCENARIO...?


Video from CD "Con l'acqua e contro l'acqua" — Consorzio Venezia Nuova

Material showed to the participants of focus groups 1 and 2
The city's aspect is of a fortified city under siege

Tangible paradigm of the application of engineering approaches to complex problems

The local economy is absorbed into engineering projects

Venezia è diventata un esempio tangibile dell'applicazione dell'ingegneria a problemi ambientali complessi.

Venezia e la laguna hanno l'aspetto di una città sotto assedio.

L'economia ingegneristica è diventata uno dei fattori dominanti nella vita economica di Venezia.

Material showed to the participants of focus groups 1 and 2
The visual attraction of the city has been greatly reduced because of the visual impact of the ubiquitous engineering works, even if in the begging, the works themselves became a tourist attraction.

La città macchina - visione

Il fascino della città è stato fortemente ridotto dalla presenza delle opere ingegneristiche, anche se inizialmente esse stesse erano un fattore di attrazione turistica.
CITY-MACHINE

The whole city slowly became a huge accident waiting to happen, and activities are now rigidly regimented...

LA CITTÀ MACCHINA - VISIONE

L'intera città si è trasformata in una bomba ad orologeria sul punto di esplodere ed i ritmi di vita si sono fortemente irreggimentati...

VISIONS - Adventures into the future

Material showed to the participants of focus groups 1 and 2
CITY-MACHINE

LIFE IN THE CITY BECOMES MORE AND MORE LIKE LIVING INSIDE A GIGANTIC ENGINEERING WORK. FOR A LARGE FRACTION OF THE POPULATION, LIFE HAS NOW A PURPOSE: TO KEEP THE MACHINE RUNNING.

LA CITTÀ MACCHINA - VISIONE

ORA IN CITTÀ SI VIVE COME DENTRO UN GIGANTESCO MECCANISMO. PER GRAN PARTE DELLA POPOLAZIONE VI È ORA UN UNICO SCOPO: FAR SI CHE LE MACCHINE CONTINUINO A FUNZIONARE.

Material showed to the participants of focus groups 1 and 2
**CITY-MACHINE**

**dominant local drivers**

- Dominance of the tertiary sector in the economy?
- Environmental degradation (particularly the high tides/subsiding and accident hazard)
- Demographic decline (stopped).

---

**LA CITTÀ MACCHINA**

**forze che influenzano la situazione locale**

- A livello economico, predominio del terziario.
- Degrado ambientale (specialmente acqua alta e rischio di incidenti).
- Declino demografico (arrestato).

---

Material showed to the participants of focus groups 1 and 2
CITY-MACHINE

FLASHBACK: IN 1999 "PETITION FOR VENICE"
"Strasburg — More than 100 European members of the parliament have signed a "petition for Venice" where it is asked to the Italian government to decide until the end of the year about the execution of the project "Mose", the mobile barriers system to protect the city from the high tides." in Il Giornale della Sera, Saturday 30 September 1999

Video from CD "Con l'acqua e contro l'acqua" — Consorzio Venezia Nuova

LA CITTÀ MACCHINA — COME MAI QUESTO SCENARIO...?

FLASHBACK: NEL 1999 "APPELLO PER VENEZIA"
"Strasburgo - Più di 100 eurodeputati hanno firmato un "appello per Venezia" nel quale chiedono al governo italiano di decidere entro la fine dell'anno per la progettazione e gestione del "Mose", il sistema di dighe mobili per proteggere la città dalle acque alte." Il Giornale della Sera, Saturday 30 October 1999

Firmato — Consorzio Venezia Nuova

Material showed to the participants of focus groups 1 and 2
VENICE INC.

VENICE BECAME A CULTURAL PARK AND A MUSEUM CITY. ONE OF THE 4 MOST IMPORTANT TOURIST DESTINATIONS OF THE WORLD.

NEW CULTURAL EVENTS ARE IMPLEMENTED TO ATTRACT MORE TOURISM. CARNIVAL TAKES PLACE 4 TIMES A YEAR.

Material showed to the participants of focus groups 1 and 2.
VENICE INC.

Three large transnational corporations dominate the economy and city life and provide most of the jobs.

The high tides become an additional tourist attraction.

New ways of using the floods as tourist shows are invented and implemented.

Material showed to the participants of focus groups 1 and 2
VENICE INC.

A major part of daily life in the city is now a parody for tourists of "La Serenissima.

The city is a setting in which the mobile local population commuting daily from the mainland performs a gigantic operatic performance.

Material showed to the participants of focus groups 1 and 2.
VENICE INC.

**dominant local drivers**
- Dominance of the tertiary sector in the economy (particularly tourism and cultural activities)
- Environmental degradation (halted)
- Demographic decline
- History of Venice (the 'myth of Venice')?

SERENISSIMA INC.

**forze che influenzano la situazione locale**
- A livello economico, predominio del terziario (specialmente turismo e attività culturali).
- Degrado ambientale (arrestato).
- Declino demografico.

Material showed to the participants of focus groups 1 and 2
CYBERIA

VENICE IS NOW A SORT OF "CULTURAL SILICON VALLEY" SPECIALIZED IN THE USE OF INFORMATION TECHNOLOGIES FOR HISTORICAL HERITAGE-BASED CULTURAL ACTIVITIES.

Material showed to the participants of focus groups 1 and 2
A deliberate effort to restore and revitalize traditional Venetian activities such as artisan fishing and handicraft is made.

The morphology of the lagoon has been stabilised.

Sforzo concreto per rivitalizzare e riproporre delle attività tradizionali veneziane come la pesca (non industriale) e l’artigianato.

La morfologia della laguna è stabilizzata.
The application of rigorous pollution control and ecological principles has resulted in a marked improvement of the health and integrity of the aquatic ecosystem.

The VISIONS project at the JRC

CYBERIA

VISIONS - Adventures into the future

Material showed to the participants of focus groups 1 and 2
Tourism flow is regulated through licensing of hotels and restaurants, taking into account the city carrying capacity for the activity, and the conditions required to improve the quality of life of the local population.
dominant local drivers

- Dominance of the tertiary sector in the economy (particularly tourism, cultural activities, and information technologies).
- Environmental degradation (reversed)
- High and democratic participation
- History of Venice (the 'myth of Venice')
EUROPE...

KUBLAI KAN TELLS MARCO POLO...

The cities you are telling me about seem to be the same city...
Maybe your stories are different ways of looking at it.
Perhaps a vision of Europe...

KUBLAI KAN COMMENTA A MARCO POLO...

Le città di cui mi parli sembrano la stessa città... Magari le tue storie sono solo modi diversi di guardarla. Forse è anche una visione dell'Europa...
TRAJECTORY: GOTHAM CITY

N.B. Material used ONLY if requested → 2nd layer of information

VISIONS - Adventures into the future

Material showed to the participants of focus groups 1 and 2
TRAJECTORY: CITY-MACHINE

N.B. Material used ONLY if requested → 2nd layer of information

Material showed to the participants of focus groups 1 and 2
TRAJECTORY: VENICE INC.

VENEICE INC. - TRAJECTORY

- Dominance of the tertiary sector
- Influence of Marghera
- Demographic decline
- Increasing commuting
- Heavy boat/ship traffic
- Environmental degradation: pollution, high noise, accident hazard
- Participation: policy-makers
- Myth of Venice

SERENISSIMA INC. - COME MAI QUESTO SCENARIO?

- Predominio del terziario
- Influenza di Marghera
- Declino demografico
- Incremento del traffico pendolare
- Degrado ambientale: inquinamento, acqua alta, rischio incidenti
- Partecipazione democratica: politici

Material used ONLY if requested

Material showed to the participants of focus groups 1 and 2
TRAJECTORY: CYBERIA

N.B. Material used ONLY if requested — 2nd layer of information

Material showed to the participants of focus groups 1 and 2
SUMMARY NOTES: GOTHAM CITY

FINAL IMAGE
- Living conditions have deteriorated very much... Air and water pollution significantly affect human and ecosystem health. Traditional activities close down. Building Decay.
- Tourism has trickled down to a small fraction
- The high tides are very frequent...
- Emigration from the historical centre has reached unprecedented levels...
- In an effort to salvage part of Venice’s cultural heritage...

A ‘new Venice’ is founded in the mainland copying the architectural styles of the historical centre.

**Dominant local drivers**
- Environmental degradation (pollution, high tides/subsiding, and accident hazard).
- Demographic decline.
- Influence of the industrial zone of Marghera.
- Increasing commuting distances and volumes.
- The Myth of Venice (that manifests in inaction)

IMMagine FInALE
- Le condizioni di vita si sono deteriorate moltissimo; i livelli d’inquinamento d’aria ed acqua danneggiano seriamente l’ecosistema e l’ambiente umano. Le industrie tradizionali sono state chiuse.
- Lo spopolamento del centro storico e della laguna ha registrato livelli mai toccati in precedenza...
- Il Turismo è fortemente diminuito
- Il fenomeno dell’acqua alta è molto frequente...
- Gli edifici originali vengono corrosi dagli acidi presenti nell’aria e dalla prolungata immersione nell’acqua inquinata...
- Nello sforzo di salvare almeno una parte del patrimonio culturale di Venezia, dipinti e sculture sono stati trasferiti sulla terraferma:

Una NUOVA VENEZIA è stata costruita sulla terraferma, imitando lo stile architettonico del centro storico...

**FORZE che influenzano la situazione locale**
- Degrado ambientale (inquinamento, acqua alta e rischio di disastri)
- Declino demografico
- Crescente influenza della zona industriale di Marghera
- Incremento del traffico pendolare, sia per distanza che per volume
- Mito di Venezia (che si traduce in inazione)
**SUMMARY NOTES: CITY-MACHINE**

**FINAL IMAGE**
- Tangible paradigm of the application of engineering approaches to complex problems
- The visual attraction of the city has been greatly reduced because of the visual impact of the ubiquitous engineering works, even if in the begging, the works themselves became a tourist attraction.
- The city's aspect is of a fortified city under siege
- The whole city slowly became a huge accident waiting to happen, and activities are now rigidly regimented...
- The local economy is absorbed into engineering projects

Life in the city becomes more and more like living inside a gigantic engineering work. For a large fraction of the population, life has now a purpose: to keep the machine running.

**Dominant local drivers**
- Dominance of the tertiary sector in the economy?
- Environmental degradation (particularly the high tides/subsiding and accident hazard)
- Demographic decline (stopped).

**IMMAGINE FINALE**
- Venezia è diventata un esempio tangibile dell'applicazione dell'ingegneria a problemi ambientali complessi.
- Il fascino della città è stato fortemente ridotto dalla presenza delle opere ingegneristiche; anche se inizialmente esse stesse erano un fattore di attrazione turistica.
- Venezia e la laguna hanno l'aspetto di una città sotto assedio
- L'intera città si è trasformata in una bomba ad orologeria sul punto di esplodere ed i ritmi di vita si sono fortemente irreggimentati...
- L'Economia ingegneristica è diventata uno dei fattori dominanti nella vita economica di Venezia

Ora in città si vive come dentro un gigantesco meccanismo. Per gran parte della popolazione vi è ora un unico scopo: far sì che le macchine continuino a funzionare.

**FORZE che influenzano la situazione locale**
- A livello economico, predominio del terziario.
- Degrado ambientale (specialmente acqua alta e rischio di incidenti).
- Declino demografico (arrestato).
SUMMARY NOTES: VENICE INC.

FINAL IMAGE
- New cultural events are implemented to attract more tourism. Carnival takes place 4 times a year
- Venice became a cultural park and a museum city:
  - Three large transnational corporations dominate the economy and city life and provide most of the jobs.
  - The high tides become an additional tourist attraction. New ways of using the floods as tourist shows are invented and implemented.
  - Venice is one of the 4 most important tourist destinations of the world
  - A major part of the daily life in the city is now a parody (for tourists) of “La Serenissima”.

The city is a setting in which the whole local population performs a gigantic operatic performance.

Dominant local drivers
- Dominance of the tertiary sector in the economy (particularly tourism and cultural activities)
- Environmental degradation (halted)
- Demographic decline
- History of Venice (the ‘myth of Venice’)?

IMMAGINE FINALE
- Vengono organizzati sempre nuovi eventi culturali per attrarre ancora più turisti. Il Carnevale accade ora quattro volte all’anno.
- Venezia è diventata un "parco culturale" e una "città-museo" destinata al turismo internazionale.
- Tre grandi multinazionali hanno il predominio dell’economia, oltre che della vita della città, e assorbono la maggior parte dell’occupazione.
- Il fenomeno dell’acqua alta è diventato un’ulteriore attrazione turistica. Nuove idee per utilizzare le maree come attrazioni turistiche sono state inventate e poste in essere.
- Venezia è ora una delle 4 maggiori attrazioni turistiche del mondo
- La vita quotidiana è ormai diventata una rappresentazione (per i turisti) dell’epoca della Serenissima.

La città è diventata un set in cui l’intera popolazione (che si sposta quotidianamente dalla terraferma) recita un kolossal.

FORZE che influenzano la situazione locale
- A livello economico, predominio del terziario (specialmente turismo e attività culturali).
- Degrado ambientale (arrestato).
- Declino demografico.
SUMMARY NOTES: CYBERIA

FINAL IMAGE
A deliberate effort to restore and revitalize traditional Venetian activities such as artisan fishing and handicraft is made.

- The morphology of the lagoon has been stabilised.
- The application of rigorous pollution control and ecological principles has resulted in a marked improvement of the health and integrity of the aquatic ecosystem.
- Eco-management of high tides through restoration of the original hydraulic system and its behaviour is highly successful.
- Tourism flow is regulated through licensing of hotels and restaurants, taking into account the city carrying capacity for the activity, and the conditions required to improve the quality of life of the local population.

Venice is now a sort of “cultural Silicon valley” specialized in the use of information technologies for historical heritage-based cultural activities.

Dominant local drivers
- Dominance of the tertiary sector in the economy (particularly tourism, cultural activities, and information technologies).
- Environmental degradation (reversed)
- High and democratic participation
- History of Venice (the ‘myth of Venice’)

IMMAGINE FINALE
Sforzo concreto per rivitalizzare e riproporre delle attività tradizionali Veneziane come la pesca (non industriale) e l’artigianato.

- La morfologia della laguna è stabilizzata.
- L’applicazione di rigidi controlli anti-inquinamento e di metodologie ecologiche ha portato ad un netto miglioramento dello stato di salute dell’ecosistema acquatico.
- Il controllo dell’acqua alta attraverso il recupero del sistema idrologico è pienamente soddisfacente.
- Il flusso dei turisti viene regolato attraverso la concessione di licenze ad alberghi e ristoranti, tenendo conto della capacità della città per ogni attività.

Venecia si è trasformata in una sorta di “Silicon Valley” culturale, specializzata nella produzione ed applicazione di tecnologie informatiche per lo sviluppo di attività legate al retaggio storico locale.

FORZE che influenzano la situazione locale
- livello economico, predominio del terziario (specialmente turismo, attività culturali e tecnologia)
- Degrado ambientale (il processo è stato completamente rovesciato
- Elevata partecipazione dei cittadini ai processi democratici
- Storia di Venezia (il "mito" di Venezia)
SCREENPLAY: GOTHAM CITY

Narrazione:
Siamo nel 2050... L'intrepido viaggiatore Marco Polo racconta a Kublai Kan, un principe dell'Asia, le fantastiche esperienze vissute nelle diverse città che ha visitato... Kublai Kan incuriosito dalle storie di MP desidera vederle con i propri occhi, così mentre MP racconta di Venezia chiede di potere visitare questa magnifica città tramite la scatola dei mondi paralleli.

Dialogo:

KK: Avrei un altro desiderio: portami a vedere questa magnifica Venezia...

MP: (inghiottisce) Hummm... Va bene, appoggia le mani nella scatola dei mondi paralleli e chiudi gli occhi... concentrati!

KK: Ma... dove mi hai portato? Questa non è Venezia!

MP: Questa è... Venezia!... Più che altro quel che rimane di Venezia. Siamo in piazza San Marco.

KK: Ma... sembra una città fantasma!

MP: Le condizioni di vita si sono deteriorate moltissimo...

KK: Perché?

MP: A causa dell'inquinamento di aria ed acqua che ha raggiunto livelli tali da danneggiare seriamente sia gli umani che l'ambiente. Per questo anche l'industria della pesca è sull'orlo della chiusura a causa della riduzione e della contaminazione della laguna e avvelenamento dei pesci.

KK: Vedo che gli edifici sono distrutti...

MP: Sì, perché il fenomeno dell'acqua alta è diventato molto frequente e l'umidità è largamente diffusa nella maggior parte degli edifici e li ha corrosi!

KK: Non si vede anima viva!

MP: La gente piano, piano ha lasciato il centro storico e la laguna. Ed ora ci abitano prevalentemente disoccupati ed emarginati.

KK: Ma Venezia non era una città importantissima anche per il turismo?

MP: Sì, un tempo! Ora i turisti non vengono più... così Venezia ha perso la sua più grande risorsa economica.

Narrazione:
All'improvviso vedono passare dal cielo una specie di nuvola... ma no, è Venezia! Nello sforzo di salvare almeno una parte del patrimonio culturale di Venezia, dipinti e sculture sono stati trasferiti sulla terraferma. Una "Nuova Venezia" è stata costruita sulla terraferma, imitando lo stile architettonico del centro storico, mentre gli edifici originali vengono corrosi dagli acidi presenti nell'aria e dalla protratta immersione nell'acqua inquinata. Si sta verificando un lento ma continuo processo di degrado.

Dialogo:

KK: E quello cos'è? Un'UFO?

MP: È la nuova Venezia che si trasferisce sulla terraferma.

KK: Perché siamo arrivati a tutto questo?

MP: Prima di tutto perché il degrado ambientale è stato uno dei problemi maggiori: in fatti la Laguna è sempre stata un elemento fondamentale alla sopravvivenza di Venezia. I suoi banchi, le paludi ed i canali rappresentavano un habitat unico per la fauna marina. La Laguna ha sempre svolto la duplice funzione di barriera protettiva e di sistema fognario naturale, visto che le marea rifluivano lungo i canali cittadini due volte al giorno.
SCREENPLAY: GOTHAM CITY

Chiaramente, ci voleva un’attenzione continua affinché non venissero causati squilibri che potevano minacciare l’esistenza stessa di Venezia, anche perché in Europa e nel resto del mondo il problema del cambiamento climatico ha alterato le stagioni e ha piovuto sempre di più. Quando l’effetto delle alte maree si combina con quello dei forti venti che a volte soffiano da sud e da est, il livello delle acque cresce e la città viene inondata. Alcuni fattori, come l’escavazione dei canali nel 20° secolo, l’eccessivo sfruttamento delle acque sotterranee in terraferma e lo sprofondamento del bacino del fiume Po, hanno contribuito a determinare un abbassamento del livello del suolo, causando a Venezia ulteriori problemi sul fronte dell’acqua alta.

KK: Quindi la situazione si è sempre peggiorata durante gli ultimi 50 anni...

MP: Sì, sai la necessità di proteggere la Laguna non è una caratteristica dei nostri giorni; già nei secoli 15° e 16° il Magistrato Alle Acque promuoveva leggi per modificare il corso di alcuni fiumi e, in generale, per salvaguardare l’ambiente urbano.

KK: Ma... come mai non si è fatto niente? I Veneziani non amavano la loro città?

MP: Sai cos’è il mito di Venezia?

KK: eh...... no!

MP: Il “Mito di Venezia” è... sai, si credeva che la città di Venezia fosse un posto splendido e benedetto e che in qualche modo sarebbe sempre stata protetta dagli eventi devastanti... In questo caso si traduce in un senso di omnipotenza: la sensazione che, in qualche modo, i problemi provocati per esempio dall’inquinamento e dal traffico nautico troveranno sempre una soluzione. Di conseguenza, non sono state realizzate azioni importanti per il controllo di questi problemi.

KK: E tutti i soldi guadagnati del turismo?

MP: La maggioranza delle risorse finanziarie disponibili per il recupero e restauro della città sono state male utilizzate in truffe. L’insieme di tutti questi elementi ha causato il declino del turismo.

KK: Ben venga, allora!


KK: Quindi quella sarebbe anche la ragione per cui la gente avrebbe lasciato il centro città a vantaggio della terraferma?

MP: Esatto... Inoltre, la forte crescita industriale (insieme all’indifferenza dimostrata dalla popolazione) ha portato ad un degrado ambientale sempre maggiore...

[kr] [sirene]

KK: Che cosa è?

MP: Arriva l’acqua alta!! Scappiamo!

KK: Portami via di qua! Portami alla vera Venezia!

MP: In fretta, metti le mani sulla scatola dei mondi paralleli!

Material used to develop the video clips showed during the session to the participants of focus groups 3 and 4
Narration:
We are in 2050...
The intrepid traveller Marco Polo tells Kublai Kan about his fantastic experiences in several cities he has been visiting...
Kublai Kan is curious about the stories of MP. and wishes to see the cities with his own eyes... so, while MP. tells the story of Venice, he asks to see that magnificent city through the parallel-world box!

Dialogue:
KK: I have another wish... take me to this wonderful city, Venice!
MP: Hum... Well, OK. Touch this box, the box of parallel-worlds, and close your eyes... concentrate!
KK: But, where are we? This is not Venice!
MP: Ah... yes this is Venice, Well the remains of it! We are at piazza San Marco, believe it or not.
KK: It looks like a ghost city!
MP: Living conditions have deteriorated very much...
KK: why?
MP: Because air and water pollution have increased to levels that significantly affect the health of humans and the ecosystem. The fishing industry is closing down because of contamination.
KK: I see that buildings are all destroyed...
MP: The high tides are very frequent and dampness has spread in most buildings.
KK: there isn't a soul!
MP: Emigration from the historical centre and the lagoon has reached unprecedented levels and the historical centre is now populated mainly by the jobless and the outcast.

KK: But, wasn't Venice a very important city, also from the touristic point of view?
MP: Oh, yes... once! Now tourists don't come anymore... so Venice has lost its own important economic resource.

Narration:
All of a sudden they see a kind of cloud crossing the sky ... it's Venice!

In an effort to salvage part of Venice's cultural heritage, sculptures and paintings are moved to the mainland. A "New Venice" is founded in a vacated area in the mainland, copying the architectural styles of the historical centre, while the buildings in the original Venice are being corroded by acidic air and prolonged immersion underwater.

Dialogue:
KK: What's that? A UFO?
MP: No, it's the new Venice that is being transferred to the mainland.
KK: Why and how did all this happen?
MP: Because of environmental degradation, which has been one of the greatest problems. The lagoon has always been a fundamental element for the survival of Venice. Its embankments, the marshlands and the canals were a unique habitat for the marine fauna. The Lagoon had a double function of protection and as a natural sewer system, since there were two tides per day that cleaned the city canals. Of course you needed a continuous control so that Venice wouldn't be at jeopardy every time there was a problem with the tides. In Europe and the rest of the world the effects of climate change have altered the seasons and there has been increased amounts of rain. When high tides combine with strong eastern or southern winds, the level of the waters rise and the city would become flooded.

Material used to develop the video clips showed during the session to the participants of focus groups 3 and 4
SCREENPLAY: GOTHAM CITY

Some factors like the excavation of the canals during the XXth century and the excessive exploitation of the underground waters in the mainland, as well as the subsiding of the Po river basin have contributed to the declining of the soil in Venice causing other problems as far as the high tides are concerned.

KK: so, the situation has gotten worse in the last 50 years.

MP: Yes, indeed. The need to protect the lagoon is not a recent problem; already in the XVth and XVI centuries the Magistrato alle Acque (the Water Authority) set up legislation to modify some of the river courses and in general to safeguard the urban environment.

KK: But, how come nothing has been done? The Venetians loved their city!

MP: do you know what the Myth of Venice is?

KK: No.

MP: The myth of Venice is the belief that the city of Venice is a splendid and blessed place. Created to be exceptional, and in some ways it would always be protected from devastating events... In this case, it translates into a sense of omnipotence, a feeling that, somehow, problems of pollution, ship and motorboat traffic will always be solved. Therefore, no actions to control these processes are taken. As a result, environmental degradation and traffic increased so much that tourism started to decline.

KK: what about the money gathered from tourism?

MP: Most of the financial resources available for restoration of the city are misused or lost through corruption. Policy-makers are either ineffective or part of the problem. All those issues have led to a decline of tourism!

KK: Great, isn't it?

MP: Not really. With the decline of tourism, and in the face of a passive attitude by the local population, the economy increasingly depended on industrial production from the islands and particularly from mainland centres. Eventually, industrial production accelerated, this increased the level of employment.

KK: That must have been the reason why people had left the historical centre...

MP: Sure. Because of the decline in tourism, employment in the centre went down. High industrial growth (combined with the apathy of the population) lead to increasing environmental degradation, and a consequent diminishing of tourism. The future is locked into industry as the major economic activity.

[sirene]

KK: Hey, what's that?

MP: The high tide is coming... We have to go.

KK: take me out of here, please. Take me to the real Venice!

MP: Quick touch the parallel-world box.
SCREENPLAY: CITY-MACHINE

Narrazione:
Siamo sempre al 2050! I due viaggiatori continuano la loro esplorazione al fine di trovare la Venezia magnifica!
[rumore di acqua in movimento]

Dialogo:

KK: Ma... dove mi hai portato? Questa non è Venezia!
MP: Questa è... Venezia!... Venezia sta dietro a queste barriere! Ecco il campanile della piazza San Marco!

KK: Ma... sembra una città macchina!
MP: Ehi, sì... Venezia è diventata un esempio dell'applicazione dell'ingegneria a problemi ambientali importanti. Le grandi barriere che hai visto bloccano gli ingressi alla laguna per proteggere la città dalle inondazioni. Vedi, ci sono anche barriere più al di là che nascondono l'orizzonte, e danno a Venezia ed alla laguna l'aspetto di una città sotto assedio. Adesso stanno costruendo un muro ininterrotto intorno alla città.

KK: Ma questo ha sicuramente apportato degli impatti ambientali terribili!
MP: Esatto, l'impatto ambientale di queste opere (tra cui le correnti intorno alle barriere, l'impatto ecologico provocato dall'affondamento di enormi quantità di cemento nella laguna e dal mutato regime idrologico) ha dato il via a nuove soluzioni ingegneristiche, cioè nuove macchine! Ognuna destinata a risolvere problemi specifici, ma, nel contempo, creandone di nuovi. Vengono costruiti macchinari sempre più grandi, sempre più complessi e sempre più costosi. Potenti motori sottomarini sono stati installati per ricostituire e mantenere la circolazione dell'acqua nella laguna.

KK: Ed il fenomeno acqua alta è stato arrestato?

MP: Le piccole inondazioni sono state effettivamente bloccate, ma ciò ha provocato un senso di sicurezza illusoria. La prima grande inondazione che le barriere non riuscirono a prevenire ebbe conseguenze catastrofiche, sono state perse vite umane, danni agli edifici ed al patrimonio culturale della città. Quindi, sono stati installati sistemi di allertamento precoce per l'acqua alta. Tuttavia, il tempo intercorso tra l'insospettato mancato funzionamento delle barriere e l'inondazione si è rivelato troppo breve per poter permettere una reazione efficace.

KK: Ma allora, questo sistema è molto dipendente dal controllo umano e i costi ambientali ed economici di un potenziale fallimento devono essere altissimi.

MP: Hai ragione! In fatti è stato stabilito un rigido sistema di controlli e sempre più persone sono state impiegate nell'attività di manutenzione di queste macchine e barriere!

KK: Il fascino della città è molto ridotto dalla presenza di tutte queste opere ingegneristiche!!

MP: Inizialmente, esse stesse attravano i turisti... per un breve periodo, però! In fatti, purtroppo, la potenzialità di Venezia come attrazione turistica è in gran parte svanita. A causa di problemi con l'economia locale, tutta la manutenzione delle opere idriche e delle barriere è diventata sempre più costosa. L'interna città si è trasformata in un'enorme bomba ad orologeria sul punto di esplodere.

KK: Ma questa città, è come se uno vivesse all'interno di un gigantesco meccanismo.

MP: Eh, si hai ragione... Per gran parte della gente che vi vive vi è ora un unico scopo: far si che le macchine continuino a funzionare.

KK: Ma... come mai è successo questo?

MP: A causa del ruolo di fondamentale importanza che Venezia...
rivestiva all'inizio del secolo a livello mondiale, sia per i flussi turistici che per il suo patrimonio culturale (ed anche a causa dei rischi collegati all'eventuale affondamento di Venezia ed alle acque alte) sono stati resi disponibili finanziamenti nazionali ed internazionali enormi!
KK: Che chiaramente sono stati usati per costruire tutte le barriere e dighe che si vedono!
MP: Esatto! Dopo un paio di incidenti gravi, i politici hanno deciso di riproporre un grande progetto ingegneristico per proteggere il centro storico da inondazioni ed ulteriori sedimenti delle fondamenta di Venezia. Così, vengono fabbricati degli enormi cancelli sommersi che chiudono la laguna e scongiurano la possibilità di inondazioni durante l'acqua alta. Tuttavia, queste enormi opere hanno un forte impatto ambientale, provocando dei problemi nel sistema idrologico lagunare, e generando nuovi rischi, specialmente quando maree di portata eccezionale superano i cancelli e si riversano sui quartieri residenziali della città.
KK: Chiaramente queste opere hanno costato una barca di soldi!
MP: Eh... sì! Per costruire tutte queste macchine si sono spese enormi quantità di soldi... per la costruzione di muraglioni, l'escavazione di canali, la costruzione di difese contro il sollevamento delle acque, quindi questa attività è diventata uno dei fattori dominanti nella vita economica di Venezia, tutte le soluzioni per fronteggiare i problemi connessi con l'acqua alta vengono pensate secondo un'ottica ingegneristica, con macchine in somma!, però vengono realizzate opere sempre più complesse!
KK: Immagino che tutto questo abbia avuto degli effetti benefici per l'occupazione ma non per il turismo!

MP: Mentre le piccole inondazioni erano normalmente tenute sotto controllo, aumentavano sempre di più il rischio di maree eccezionali che superino le difese, richiedendo così controlli sempre maggiori. Vedi, una volta che entri in questo circolo vizioso non ne esce più, condannà la città ad un'eterna strategia di controllo! Con il calo del turismo, l'industria domina in misura sempre maggiore l'economia locale, causando così una nuova ondata di problemi ambientali! L'insieme di queste situazioni, combinate con l'incredibile complicazione delle opere ingegneristiche, richiede nuove soluzioni ad un ritmo sempre più frenetico semplicemente per mantenere la situazione!
[rumore forte e sirene]
KK: Scusa... che rumore e questo? La sirene di nuovo?
MP: Si, arriva un'onda gigante!! Andiamocene di qua!!
KK: Si, ma per favore, questa volta portami alla Venezia vera!
MP: Rapido tocca la scatola dei mondi paralleli!!
[In off, tipo voce della radio]

Narrazione:
Ancora una volta Caim non ha protetto la Serenissima. G3, la diga situata a nord della città non ha resistito al maremoto di scala 5, cioè un'onda gigantesca che ha devastato la piazza più famosa della città. L'acqua ha inondato la bellissima cattedrale dedicata al patrono della città San Marco e alcuni caffè bicentenari. Gli esperti affermano che le cause di questo disastro sono da attribuirsi alla scarsa manutenzione. La pubblica amministrazione ha mostrato forti preoccupazioni per le crescenti difficoltà nel reperimento di fondi destinati al restauro dei palazzi danneggiati dall'inondazione. La domanda che ormai tutti i Veneziani si pongono è la seguente: "Perché la manutenzione di Venezia e del suo sistema di dighe ha raggiunto tali livelli di degrado?"
SCREENPLAY: CITY-MACHINE

Narration:
We are still in 2050! The two travellers continue their exploration to find Venice, the magnificent!

Dialogue:
KK: Hum... where did you take me? This is not Venice!
MP: Well... this is Venice, Venice is behind these barriers! Look, that's the bell tower of San Marco!
KK: But, it looks like a city-machine!
MP: Yeah... Venice has become a perfect example of the application of the engineer approach to complex hazards. Big barriers cover the entrances to the lagoon to protect the city against flooding. Additional barriers cover the horizon, giving Venice and the lagoon the aspect of a fortified city under siege. A continuous wall around the city system is under construction.
KK: But this had surely terrible environmental impacts!
MP: Indeed, the environmental impact of the works: water flowing around the barriers, the impacts of sinking huge amounts of cement into the water, the ecological impacts of the changed hydrological regime; have triggered new engineering solutions, each solving specific problems but generating additional ones. Bigger, more complex, and more expensive systems are being built. Powerful underwater propellers are in place, implemented to redirect and maintain the circulation of water in the lagoon.
KK: Was the high tide phenomenon arrested?
MP: Small floods have been effectively stopped, but this generated a false sense of security. The first large flood that the barriers failed to prevent had catastrophic consequences, taking a toll on lives and causing damage to the buildings and the city's cultural heritage. While efficient early warning systems for high tides were in place, the elapsed time between the unexpected failure of the barriers and the flood proved to be too short for effective action.
KK: Then, these systems are very much dependent on human control and the environmental and economical costs of a potential failure must be very high!
MP: You are absolutely right. As a consequence, rigid operational controls have been established, and more people are employed in maintenance activities.
KK: Then, the visual attraction of the city has been terribly reduced because of the visual impact of the engineering works.
MP: Initially, the works themselves became a tourist attraction. However, this was short-lived, and in the longer-term tourists were turned off in large numbers. The power of Venice as a magnet for tourism has largely vanished. As the economy of Venice dwindled, it became much more onerous to pay for the barriers and the maintenance of the water works. The whole city slowly became a huge accident waiting to happen, and activities are now rigidly regimented.
KK: So, it's like living in a gigantic engineering work!
MP: Yes, for a large fraction of the population, life now has a purpose: to keep the machines running...
KK: And, how did this come to be?
MP: Due to the global importance of Venice for international tourism and as part of the world's cultural heritage (and the risks posed by the sinking of Venice and the high tides), increasing amounts of national and international financial support become available.
KK: ...Which have been used to build the barriers, of course!
SCREENPLAY: CITY-MACHINE

MP: Yes. After a couple of unfortunate high tide-related incidents which caused the death of one famous Italian senator and some foreign VIPs, Policy-makers at the regional and national level decided to resuscitate a large engineering project aimed to protect the historical centre from the floods and from further subsidence. Huge submersible gates barring the lagoon and blocking the floods during the high tides were built. These huge works generated additional environmental impacts due to their interference with the hydrological regime of the lagoon, and new risks have been generated, particularly when higher than normal tides bypass some of the gates and overflow into prosperous residential areas.

KK: Clearly those have cost an enormous amount of money!

MP: Yes... as the “Engineering Works Economy” involving colossal expenditures on works, shoring up sea walls, digging channels and building defences, has become one of the dominant elements of the Venetian economy. The preferred response lies in the design and implementation of new engineering solutions, generating more and more complex works.

KK: I imagine that this has provided a high level of employment, but it also had a negative impact on tourism.

MP: You're right. Whilst the small floods are normally contained, the risk of higher than normal floods overwhelming the defences has increased with time, demanding more and more controls. Eventually a threshold of complexity is exceeded, and the cost of dismantling and re-designing becomes so high that the city becomes forever committed to a command and control strategy. As tourism dwindles, industry (combining the classical industrial activities of the mainland and those of the large engineering corporations), increasingly dominates the economy, generating a new wave of environmental impacts (even when mitigating measures are taken).

These impacts combine with the ultra-complexity of the engineering systems resulting in the need for still increasing controls and a general loss of resilience towards new, unexpected events. By this time, as in the story of Alice with the Queen of Hearts, solutions need to be found at an ever-faster pace to keep in the same place.

[sirene]

KK: Excuse me... what's that noise? The sirens again?

MP: Yes, a gigantic wave is arriving! Let's go immediately...

KK: Yes, but please this time take me to the real Venice!

MP: Quick, touch the parallel world box!

Narration:

[voice radio type]

Another time, Caim has not protected La Serinissima. G3, the dam located at the north of the city has not resisted the scale 5 tsunami that has devastated the most famous piazza of the city. The water has inundated the beautiful cathedral dedicated to the patron of the city, San Marco and some of the bicentenary cafés. Experts say that the cause of this disaster is due to poor maintenance. Local authorities have showed great concern for the growing difficulties in obtaining the necessary funding for restoration of the buildings damaged by this inundation. The question every Venetian is asking is, “why has the maintenance of Venice and its barriers system reached unsustainable levels?”...
SCREENPLAY: VENICE INC.

Narrazione:
Siamo sempre nel 2050...
Marco Polo e Kublai Kan si trovano in un luogo che sembrerebbe un stage per fare una ricorda un palcoscenico dove si girano i film come quelli di Hollywood in America...

Dialogo:
KK: Ma... senti questa sembra Venezia, la Venezia che mi raccontavi... però... e quello? Chi è? Sei sicuro che siamo nel 2050? Sembra un attore di un film del secolo XVIII! Che strani gli abbigliamenti! Siamo a carnevale?! E questo edificio? Ma non era... Ma...

MP: Eh si, hai visto bene! Siamo come in palcoscenico di teatro!! Gli edifici di Venezia sono la sceneggiatura e le persone gli attori!

KK: Ma... allora è tutto finto?!

MP: Questa è... Venezia!!... Siamo in piazza San Marco. Gli edifici sono tutti veri. Potrebbe essere definita la città teatro, la Broadway italiana, o VeneziaLand. ... Per risolvere i suoi problemi ambientali, occupazionali, etc. qualcuno ha avuto l’idea di trasformarla nel più gran business mai concepito per una città d’arte. Tra l’altro in tutta l’Europa ci sono questi gran business che dominano l’economia! Così, durante gli ultimi 50 anni, Venezia è gestita da grandi multinazionali, coinvolgendo i cittadini in una sceneggiatura che trasforma Venezia in un ibrido a metà strada tra città d’arte unica, romantica e un AUTENTICO parco di divertimento. Così, le problematiche dell’inizio del 2000 si sono trasformate in fantastiche opportunità di business.

KK: Ma... sembra la disneyland! Eccoli li tutti i turisti!

MP: Eh sì! Venezia è ora una delle quattro maggiori attrazioni turistiche del mondo. Qui arriva una quantità di turisti come mai si è visto in precedenza. Tre grandi compagnie internazionali hanno tutto il potere economico e si sono anche impadronite della vita della città perché sono loro che offrono posti di lavoro. Venezia è diventata un "parco culturale" e una "città-museo" destinata al turismo internazionale!!

KK: Ma adesso siamo a carnevale?

MP: E no! Non siamo a carnevale adesso, però vengono organizzati sempre nuovi eventi culturali per attrarre ancora più turisti. Il Carnevale accade ora quattro volte all’anno, ma come vede le persone girano vestite con costumi d’epoca. È diventato tutto un rituale!

KK: E l’acqua alta? L’inquinamento che c’era nel 2000?

MP: L’inquinamento è stato efficientemente controllato, grazie all’investimento di una parte degli enormi profitti derivanti dall’industria del turismo. Il fenomeno dell’acqua alta è diventato un’ulteriore attrazione turistica. Nuove idee per utilizzare le maree come attrazioni turistiche sono state inventate e poste in essere.

KK: E chi vive qua?

MP: Di notte, la gente che ci vive è limitata alle persone che lavorano nei ristoranti, negli alberghi, nei servizi di sicurezza ed in generale nei servizi essenziali. I Veneziani sono diventati invisibili in mezzo alla massa dei turisti. Di giorno, le attività commerciali e culturali raggiungono l’apice e richiedono un numero sempre maggiore di operatori. La vita quotidiana è ormai diventata (per turisti) una rappresentazione dell’epoca della Serenissima. La città è diventata un set in cui l’intera popolazione recita un kolossal.

KK: Beh... allora, i Veneziani hanno perso la città loro in un certo senso, non?

MP: Hai ragione! La città con i suoi monumenti e le sue case...
esiste sempre ed è anche ben mantenuta, però la gente di Venezia è come si non esistessi. La città è degli attori e turisti!

KK: e come mai questo è successo?

MP: Sei molto curioso! Allora... il turismo è cresciuto costantemente diventando il settore unico e dominante dell'economia. Quindi piano, piano la città si è riempita soltanto di albercati, restauratori, agenzie di viaggi, gondolieri, di maestri vetrai di Murano, di registi che ti fanno interpretare una sceneggiatura del secolo XIII e poi ti porti il DVD a casa, di guide che ti portano a vedere le maree ed i pesci... insomma è una vetrina!

KK: Humm...

MP: Inizialmente, i livelli di inquinamento ambientale ed i problemi di traffico nautico provocati da imbarcazioni di grosso tonnellate hanno avuto un impatto negativo su queste attività, ma dopo con l'aumento del reddito provocato dal turismo, molte delle ditte hanno deciso di investire in prima persona in progetti riguardanti il miglioramento delle condizioni ambientali e di traffico. Questi investimenti privati, sommati con quelli pubblici, hanno permesso di arrestare in gran parte il degrado ambientale ed architettonico. In alcuni casi, l'ambiente viene perfino migliorato, specialmente rispetto a fattori estetici e sanitari! Grazie al settore turistico ci sono più posti di lavoro e come la popolazione locale è diventata molto ridotta, si è cominciato ad utilizzare lavoratori proveniente dall'esterno. Questo ha fatto sì che il traffico tra il centro storico e la terra ferma aumentasse e...

KK: HEY!!! Ma quella, quella è l'uscita della metropolitana!!!

MP: Hai visto bene! Proprio a causa di quello che ho appena detto, hanno costruito una metropolitana sotterranea che passa al di sotto della laguna! Quindi, vedi il turismo non poteva solo che aumentare, aumentare! E chiaramente tutte le decisioni prese per la città sono state fatte...

KK: da quelli che hanno in mano il turismo!! ... E quindi qua non si fa altro! Neanche le sue ci sono!

MP: Ma, tutto sommato la storia e la cultura di Venezia vengono mantenute, però reinterpretate per il turismo e quindi sono state inventate nuove "tradizioni" spettacolari!! Ed... eccoti... Carnevale è già nella settimana prossima!!

KK: Ma siamo a Giugno!

MP: Dobbiamo andare... è scaduto il tempo! Vuoi rimanere qui?

KK: Ma scherzi!! Per favore portami via di qua! Non posso più con tutto questo sgomitare! E tutta questa vita finta!

MP: Rapido, tocca la scatola dei mondi paralleli!!
Narration:

This is still 2050...

Marco Polo and Kublai Kan are in a place that seems like the scenery for a movie like those in Hollywood – where they make films in America.

Dialogue:

KK: well... this looks like Venice, the Venice you were telling me about... still... what's that? Are you sure we are in 2050? This seems an actor of a film form the XVIIIth century! How awkward those clothes look! Is this Carnival? What about this building? But wasn't this... anyway....

MP: Yes, you are right! We are on a stage! The buildings in Venice are mere backdrops and the people are the actors!

KK: But, then everything is false?!

MP: This is Venice. We are in piazza San Marco. The buildings are all real. It could be defined as a theatre town, the Italian Broadway or Venice-land... To solve its problems of environment, employment, etc., someone has had the idea of transforming Venice into the largest business for an art-city. In fact all over Europe big businesses dominate the economy! So during the last 50 years, Venice has become managed by large multinationals, involving the citizens in a screenplay that has transformed Venice into a hybrid between a romantic unique city of art and an authentic theme park. The problematics of the beginning of the 21st century have been converted into fantastic business opportunities.

KK: Yeah... It looks like Disneyland! There you are, loads of tourists!!

MP: You are right. Venice has become one of the four most important tourist destinations in the world. Tourism has been growing steadily and it now generates unprecedented profits; three large Italian-born transnational corporations dominate the economy and city life and provide most of the jobs. Venice became a "cultural park" and "museum city" for international tourism.

KK: Is this Carnival?

MP: No, not really. This is not Carnival, but new cultural events are devised to attract more tourism. Carnival takes place four times a year now. People are dressed in period costumes. Life has become strangely ceremonial.

KK: What about the high tides and the pollution problems of the beginning of the century?

MP: Pollution has been efficiently controlled through the investment of part of the huge profits from the tourism/cultural industry. The high tides become an additional tourist attraction. New ways of using the floods as shows for the tourists are invented and used.

KK: What about the people living in here?

MP: The local resident population shrinks during the night-time to people working in the restaurants, hotels, and essential services, and some security staff. Venetians are undetectable among the masses of tourists. In daytime, commercial and cultural activities peak and demand more operators.

A major part of daily life in the city is now a parody (for tourists) of "la Serenissima". The city is a setting in which the whole local population (commuting daily from the mainland) performs a gigantic operatic performance.

KK: So, in a sense the Venetians have lost their city....

MP: You are right. The city exists with its monuments and its houses and it's well maintained, yet it is as if the people of Venice don't exist... The city belongs to the actors and the tourists!
SCREENPLAY: VENICE INC.

KK: How did this come to be?
MP: Well... The business of tourism has consolidated through mergers and take-overs, and become the dominant socio-economic sector with a very powerful lobbying influence in decision-making. Therefore, slowly the city became full of hotel managers, restaurants, travel agents, gondolieri, Murano glass dealers, those that bring you to see the tides and fishing, "directors"... yes! You can bring home a DVD containing your own XIlth century play!... to sum it up, it's a shop-window!
KK: Hummm...
MP: Initially, the level of environmental degradation and heavy boat traffic affects the activity negatively, but as tourism-generated wealth increases, many of the firms involved in the activity realise it is profitable to make direct investments in environmental and traffic improvement. These & the public investments, manage to halt most environmental and architectural degradation. The environment is even improved in some cases, particularly regarding health and aesthetic conditions.

Employment by the tourist sector increases very fast, and, because of the limited size of the local population, begins attracting labour from outside Venice (including specialised foreign workers). This, eventually, reinforces the commuting problems that begin to become critical...
KK: Hey... but that's an underground exit!
MP: Yes, it is... because of commuting problems, some expensive solutions, such as the underground metro system have been implemented. Serious engineering problems due to the geology of the sediments had to be overcome. So, you see, tourism could only increase!

KK: Clearly, all decisions made for the city have been made by those that control tourism!
MP: Well, in some senses the history and culture of Venice are preserved... but they have been reinterpreted by the tourism lobby... The local and historical cultural values became diluted and absorbed by new settings, new "traditions", highly colourful and specially designed to attract tourists. Carnival is next week!
KK: But we are in June!
MP: Ok, we must leave. Time is over. Do you want to stay here?
KK: You must be kidding! Please take me away from here! This is all artificial!
MP: Ok... touch the parallel world box!

Material used to develop the video clips showed during the session to the participants of focus groups 3 and 4
SCREENPLAY: CYBERIA

Narrazione:
Siamo sempre nel 2050...
Marco Polo e Kublai Kan si trovano a Venezia, Piazza san Marco...

Dialogo:

KK: Ma guardà, una gondola che vola!
MP: È un nuovo sistema di trasporto pubblico! Ma non ci sono tante... le stanno sperimentando!
KK: Chi sa che combustibile utilizza, perché non puzza!
MP: Eh no... è un sistema tutto nuovo senza combustibile! Utilizza un processo anti-gravitazionale...
KK: Anti che?
MP: Ah, lascia perdere, è una roba del 2050!
KK: Comunque spieghiam un po' cosa succede qua!
MP: Venezia si è trasformata in una sorta di laboratorio informatico per la cultura, specializzata nella produzione ed applicazione di tecnologie informatiche per lo sviluppo di attività legate al retaggio storico locale.
La città commercia ora il suo patrimonio culturale con realtà virtuale, software altamente sofisticati, molto apprezzati sia in Italia che all'estero, e Venezia sta prosperando come centro di "informatica culturale" di livello mondiale. La morfologia della laguna è stabile. Adesso il controllo dell'acqua alta è fatto attraverso il recupero del sistema idrologico. I pesci e tutti gli animali acquatici vivono in un ambiente più sano!

Narrazione:
Si applicano rigidì controlli anti-inquinamento che permettono il miglioramento dello stato di salute dell'ecosistema acquatico. In realtà, le persone hanno imparato a convivere con l'acqua alta mentre le fondamenta e le cantine sono state trattate a fine di ridurre al minimo i danni provocati dalla prolungata immersione in acqua. Il livello del suolo in Piazza S. Marco ed in altre piccole aree è stato rialzato.

Dialogo:

KK: Non mi sembra che ci siano tanti turisti adesso...
MP: Il numero dei turisti è stato regolato attraverso la concessione di licenze ad alberghi e ristoratori, tenendo conto sia della capacità della città per ogni attività sia delle condizioni necessarie al miglioramento degli standard di vita dei cittadini. Questo vuole dire che non si sono potute trasformare tutte le case in abitazioni per i turisti e che solo alcuni possono fare l'alberghiere, non come nel 2000 che ogni persona che aveva una camera in più poteva farlo! Così, a Venezia ci sono molto meno turisti! Comunque il turismo non è l'unica attività che fa soldi e che da posti di lavoro! Tu pensa che non è neanche la più importante!
KK: Ah, a quello non ci credo nessuno!
MP: È vero, perché c'è un sacco di gente che lavora sull'informatica! Si chiama cyber-lavoro! Ciò permette la creazione di applicazioni ai computer molto creative e che non hanno impatto ambientale! Comunque in tutta l'Europa si è sviluppato questo tipo di attività!
KK: Allora si sono dati da fare i Veneziani!

MP: Hai ragione! Conosci il mito di Venezia?
KK: Sì, si me lo hai già spiegato! La convinzione che i Veneziani possano affrontare vittoriosamente qualsiasi problema, insomma!
MP: Molto bene! Quindi, decisi ad affrontare i crescenti problemi che affligono la città e traendo forza in questa loro decisione dal mito di Venezia, i cittadini di Venezia si sono alleati con i politici e hanno dato il via ad una serie d'iniziative...
SCREENPLAY: CYBERIA

basate sulla partecipazione di tutta la gente nel decidere il futuro della città. come lo hanno risolto? È diventato anche esso realtà virtuale? – ride

MP: Una delle priorità su cui c’è stato maggiore accordo era la volontà di consolidare l’economia locale intorno ad attività che non provoressero degli impatti ambientali e comunque, la priorità considerata di maggiore importanza è stata la qualità della vita a Venezia. In una prima fase, il turismo viene incoraggiato ma, contemporaneamente, attentamente regolato, mentre altre attività di tipo culturale vengono sviluppate.

Narrazione:
Severi controlli sulle attività inquinanti sono stati fatti rendendo così Venezia più attraente per i suoi abitanti e anche per i turisti! Si sono fatte delle campagne per incrementare la coscienza ambientale anche dei turisti! Una parte dei costi derivanti dalle misure per abbandonare l’inquinamento e promuovere lo sviluppo culturale è stata caricata sul settore turistico, e ciò ha provocato un aumento dei prezzi per ciò che riguarda i servizi ai turisti.Questa misura ha permesso di coprire i costi per il restauro ambientale e, contemporaneamente, ridurre il volume del turismo "mordi e fuggi", senza comunque provocare un abbassamento significativo dei redditi derivanti dall’attività turistica. Si è fatto anche uno sforzo concreto per riprendere delle attività tradizionali veneziane come la pesca (non industriale) e l’artigianato.

Dialogo:

KK: E l’informatica, cosa c’entra?

MP: Venezia diventa di nuovo creativa! Allora, all’inizio questa attività è stata finanziata con i soldi del settore turistico, ma ormai è totalmente autonomo, cioè vive dei soldi che fa! In fatti ci sono sempre di più le ditte che fanno tecnologie legate all’informazione.

KK: Le applicazioni informatiche, cioè i software, che cosa sono?

MP: Sono legati alla storia e alla cultura di Venezia... vedì la storia e la cultura Veneziane, che fanno di questa città un luogo unico al mondo, insieme alle capacità creative dei Veneziani, danno come risultato l’esplosione di un nuovo tipo di industria: l’informatica culturale, basata sulla creazione di software culturali ed educativi, giochi e DVD con istruzioni per accedere al patrimonio artistico e culturale della città attraverso sofisticati programmi di realtà virtuale.

KK: Realtà virtuale, cosa è?

MP: Tu vedi San Marco ed i piccioni, li tocchi anche, però non sei lì! È tutto virtuale! Allora si possono fare delle "visite virtuali" che sembrano realistiche, permettendo così la diminuzione del traffico turistico.

KK: Hey! Questo non è virtuale!! Beh… E con questo si fa una barca di soldi! Si creano posti di lavoro…

MP: ed in più si può lavorare dalla propria casa... hai presente GALAXYNET? Quindi, il traffico è stato molto diminuito! La vita è diventata sempre più gradevole e le persone rimangono a Venezia per vivere!

La partecipazione dei cittadini nelle decisioni sulla città hanno permesso la nascita di un forte senso di comunità e recupero di valori umani basilari. Inoltre, Venezia è diventata l’esempio e l’ispirazione per molte altre città in diverse parti del mondo!!

KK: Sai che mi ricorda? Quella parte della storia che mi raccontavi l’altro giorno…

"La città rifà se stessa tutti i giorni: ogni mattina la popolazione si risveglia tra lenzuola fresche, si lava con saponette appena sgusciate dall’involucro, indossa vestaglie nuove fiammanti…"
estrane dal più perfezionato frigorifero barattoli di
latta ancora intonsi, ascoltando le ultime filastrocche
dall'ultimo modello di apparecchio”.
sarebbe Venezia?
MP: Chi lo sa? Vuoi rimanere?
KK: No... continuiamo a cercare...
MP: Presto, tocca la scatola dei mondi paralleli!!

Narrazione:
Troveranno mai la Venezia che cercano?
E tu come la vedi la Venezia nel 2050? Insomma come la
immagini quando avrai l'età del tuo nonno?
SCREENPLAY: CYBERIA

Narration:

We are still in 2050.

Marco Polo and Kublai Kan are in Venice, Piazza San
Marco...

Dialogue:

KK: Look, a gondola that flies!
MP: It’s a new public transport system… but they are still in
the experimentation phase!
KK: What kind of fuel does it use? It doesn’t smell!
MP: It’s a new system that doesn’t use a fuel as we know it, but
an anti-gravitational process...
KK: Anti-what?
MP: Forget it! It’s something of the year 2050!
KK: Anyway, explain to me what’s going on here?
MP: Venice has been transformed into a sort of informatics lab
for culture, specialising in the production and application of
informatics technologies linked to the local historical setting...
The city now trades its cultural heritage through sophisticated
virtual reality software and so is flourishing as a centre for
“cultural informatics” at international level. The morphology
of the lagoon is stable. Eco-management of high tides through
restoration of a sustainable hydraulic system and its behaviour
is highly successful. Fisheries and aquatic life thrive.

Narration:

The application of rigorous pollution control and ecological
principles has resulted in a marked improvement of the health
and integrity of the aquatic ecosystem. People have learnt to
live with the high tides and the foundations and cellars have
been treated to minimise damage due to immersion. The base
level of the San Marco piazza and of some small strategic
areas have been raised.

Dialogue:

KK: There are not so many tourists as in the beginning of the
century...
MP: Tourism flow is regulated through licensing of hotels and
restaurants, taking into account the city’s capacity for the
activity, and the conditions required to improve the quality of
life of the local population. That means that not all people
with a room could become an hotel-keeper! But tourism is not
the only, nor even the major, source of income and jobs.
KK: That’s hard to believe!
MP: A variety of cyberjobs, highly creative and with low
environmental impact, now provide occupation. Venice is now
a sort of “cultural Silicon valley” specialising in the use of
information technologies for historical heritage-based cultural
activities. The city trades its cultural treasures in highly
sophisticated virtual reality packages, much appreciated at
the national and international levels, and Venice is flourishing
as a world-class learning centre for “cultural informatics”. In
all of Europe these types of activities have flourished!
KK: Then Venetians have done something!
MP: Indeed, you know… the myth of Venice!
KK: This time it worked the other way around!
MP: Yes… Faced with the increasing problems of the city, and
gaining strength from the myth of Venice (with its conviction
that Venetians can always cope with any problem), the local
citizens joined forces with the policy makers and started a
series of participatory debates about the future of the city.
KK: What about pollution? Did it become virtual, as well?
SCREENPLAY: CYBERIA

— laughs.

A widely shared preference has been the desire to further consolidate the economy around the tertiary sector; on the other hand, the importance of the quality of life in the city was given the highest priority. In a first phase, tourism has been stimulated but carefully regulated, while other cultural activities were supported.

Narration:

Pollution controls are put in place, making the city more attractive to its inhabitants and to environmentally conscious tourism. Part of the cost of pollution abatement and cultural development is transferred to the tourist sector, resulting in increased prices of tourist services. This helps to cover the costs of environmental restoration and at the same time reduces the volume of tourists, without a significant impact on earnings from tourism.

A deliberate effort has been made to restore and revitalise traditional Venetian activities such as artisan fishing and handicrafts.

Dialogue:

KK: What about the informatics?

MP: Venice became creative again! Partially financed by the profits of the tourist sector, but increasingly self-motivating, a widespread growth of information technologies has occurred.

KK: But what are those?

MP: The combination of the unique Venetian historical and cultural advantages, and the creative capacities of the Venetians, resulted in the explosion of a new industry: cultural informatics, developing cultural and educational software, games and instruction kits based on access to the cultural treasures of the city through sophisticated virtual reality packages. Some of the VR services allow very realistic “virtual visits” to the city, reducing a sizeable portion of the demand from tourism.

KK: What’s virtual reality?

MP: You may see the piazza San Marco with pigeons, etc. You can even touch it but you are not there! Everything is virtual! This allows seemingly real visits to the sites and so tourism has diminished.

KK: Hey! This isn’t virtual! So, one could make a lot of money.

MP: A new cyber-economy is born, providing employment, reducing commuting problems because many people work at home joined by telecommunication links. You know GALAXYNET… and increasing income.

The improved living and environmental conditions contribute to the arresting of the demographic decline. The exercise of participation and networking results in a sense of community that restores ancient human values; this social experiment gives inspiration to other cities in different parts of the world.

KK: Do you know what this reminds me of? That part of the story that you were telling me the other day...

"The city revives itself everyday: every morning the population wakes up amidst fresh sheets, it washes itself with new soap, it puts on new flaming dresses, gets uncut tins from perfect fridges and listens to the latest songs on the latest model of radio set …"

KK: And so this would be Venice?

MP: Who knows... Do you want to stay?

KK: No, I'd like to continue my search...

MP: Quick: Touch the parallel-world box!

Narration:

Will they find the Venice that they are looking for? And you, how do you see Venice in 2050? How do you imagine it when you will be 70 years old?
APPENDIX 2: DRIVING FORCES

Here we describe the activities of the JRC team within the VISIONS project. During the project a set of scenarios for Venice has been prepared - see Chapter 2 (page 8 of the REPORT section). This section describes the main driving forces that have been considered to develop the scenarios and final visions. This section is taken from the report by Gallopín, 2000 – work done under contract no. 15072-1999-06 F1EI ISP SE with the Joint Research Centre.

The VISIONS Project (Integrated Visions for a Sustainable Europe) was a three-year project which started in February 1998. It was funded by DG RTD of the European Commission through the 4th Framework Programme, Theme 4 Human Dimensions of Environmental Change (Contract no.: ENV4-CT97-0462).
THE DRIVING FORCES

This section is taken from the report by Gallopin, 2000 - work done under contract no. 15072-1999-06 F1EI ISP SE with the Joint Research Centre.

The City of Venice is located in the northeastern part of Italy. It is a major Italian port in the northern Adriatic and the capital of both the Venice Province and of the Veneto region, and is one of the world's oldest tourist and cultural centres.

An island city, the greatest seaport in late medieval Europe and its commercial and cultural link with Asia, Venice is today unique environmentally, architecturally, and historically. In its days as a republic, the city was called La Serenissima ("the most serene").

Venice lies on an archipelago in a lagoon that stretches from reclaimed marshes in the north to the drained lands at the southern end. A line of sandbanks, or lidi, whose three gaps, or porti, allow passage of the one-meter tides and the city's maritime traffic, protects the shallow waters of the lagoon. On the sandbanks are many small settlements, some of them centuries old.

The Municipality of Venice operates in three clearly differentiated areas:

1. The "historic centre" (the most well-known and visited area, the Venice that tourists see);
2. The "estuary" - i.e. the area between the mainland and the open sea, the lagoon proper and its islands;
3. The "mainland" (terraferma), facing the lagoon, includes the area of Mestre and Marghera. This is the result of the successive incorporation of territories (started in 1886 but mostly taking place in the 1920's). Now, the mainland shows the typical characteristics of large industrial and residential areas.

Originally formed by the interaction of Adriatic tidal currents and the waters of several Alpine rivers, the lagoon has always been crucial to the survival of Venice. Its mud banks, shallows, and channels represent a source of income from marine and bird life and from salt pans. The lagoon has served as protection for the city and as a natural sewerage system, with the tides flushing out the city's canals twice daily. But it requires careful husbandry to prevent threatening the very existence of Venice. When high tides combine with storm winds from the south and east, the lagoon rises and floods the city. The deepening of channels in the 20th century, the over extraction of fresh water from mainland aquifers, and the geologic sinking of the Po River basin have combined to lower the land level, adding to Venice's flooding problem. The need for protection of the lagoon is not new. In the 15th and 16th centuries the Venetian ministry for water matters was already diverting rivers from the lagoon and passing laws to safeguard the urban environment.
Current (local) driving forces

The local driving forces have been preliminarily identified (on the basis of the available information) as described in the remaining of this section. Those drivers, in interaction with higher-scale (regional, national, global) forces, are potential determinants of the branching of Venice’s historical trajectory into alternative futures.

Dominance of the tertiary sector in the economy (in the historical centre and the estuary)

The economy of the historical centre shows a clear prevalence of the tertiary sector. In particular, the economic activities are linked with tourism and commerce, the public administration and political activities (Venice is the seat of the provincial and regional governments - tribunals, representative bodies and consulates). Nearly a third of the city's workers find employment in tourism, now continuous through all seasons. The authorities have actively encouraged the tourist industry. Also important are the cultural activities - the university, theatres, museums, foundations - and cultural events, such as the “Biennale” art exhibit and international festivals of film, drama, and contemporary music, in addition to the ancient Carnival (revived since the 80's). These, together with the promotion of Venice as an international conference centre, bind the city’s economy ever more firmly to tourism.

The main economic activity of the estuary is tourism. The mainland concentrates its economic activities in the tertiary sector, such as financial institutions, insurance, commerce (the case of Mestre), and in the industrial sector (the case of Marghera).

Environmental degradation

Environmental degradation figure among the most urgent problems confronting Venice today. Since the 50s the deterioration of ancient buildings and art treasures (which had long been associated with natural phenomena such as flooding and subsidence) has been intensified by an atmosphere laden with sulphuric acid, much of it generated by industrial and domestic smoke. Exhaust fumes from the famous glasswork ancient industry also contribute to the corrosion of Venice’s stonework. Air pollution has already corroded and defaced many priceless examples of stonework from the Venetian past.

While the era of large oil refining and petrochemical development along the lagoon shore is now over, its damage to Venice in visual and environmental terms has been immense. After the disastrous floods of 1966, UNESCO began to coordinate an international effort to preserve the city. A number of national committees, too, now exist to save Venice and its art treasures from the combined effects of corrosive air pollution, rising damp, flooding in high-water periods, sheer age, and even befouling by pigeons.
The completion of an aqueduct from the Alps to Marghera has prevented further aquifer exhaustion, and buildings and monuments have been renovated. But the most intractable environmental problem remains that of the high tides, or acqua alta. This is a phenomenon, which occurs periodically, and with apparently increasing frequency. It is associated with the progressive subsiding of the historic Venice and with a more general hydraulic disorder, due to land reclamation and digging schemes, resulting in changes in the morphology and water circulation of the lagoon. A plan to build a mechanical barrage that can be raised in times of flooding to close the lagoon was initiated in 1988, when engineers began testing a prototype. The project has been officially discontinued in 1998.

The scale and nature of the activities carried out in the Industrial Zone, combined with the close proximity of other human activities and the environmentally sensitive Venetian lagoon, inevitably mean that pollution and the risk of accidents are, and will continue to be, key issues in this area.

The presence of the Marghera industrial pole results also in the creation of major accident hazards, associated to the production, processing, storing and transportation of dangerous substances and the passage of large oil tankers through the lagoon.

Existing water treatment plants of Venice are able to treat about 62% of the total sewage waters produced by its municipalities. There are three plants that include physical, chemical and biologic treatment, processing both domestic and industrial sewage water located in the municipalities of Campalto (only domestic), Fusine and Malamocco. However, the domestic sewage waters from the historical centre are not treated, and are released directly in the lagoon. The only exception is hotels, which are obliged to have small water treatment plants. This leads to water pollution problems in the lagoon and offensive odours. Occasionally, sediments are removed through excavation. Urban solid waste production increases during spring and summer due to the tourist fluxes. Differentiated collection of waste does take place, usually separating paper, glass and organic components at the source.

Demographic decline

Since reaching an all-times high of some 370,000 persons in 1968, the resident population of the whole Municipality (including the mainland) has been decreasing (it went below the 300,000 residents mark in 1995).

A worse problem for Venice is the loss of population from the city core, which decreased from about 175,000 in 1951 to 71,000 in 1995. Faced with poor social amenities and old, decaying, often damp buildings with rents inflated by the costs of renovation, demands of the tourist industry, and wealthy foreign residents, Venetians seem to have elected in ever-increasing numbers to move into modern apartments in the mainland boroughs of Mestre and Marghera or on the Lido. This combines with a decline in the birthrate and an increase in the elderly fraction of the resident population to compound the demographic decline.

In the estuary there have not been noticeable variations in the numbers of residents.
High and democratic participation

Rooted in its historical past, a tradition of democratic participation is well established in Venice and remains in place even if the “expropriation” of the historical centre by tourism has progressively changed the demographic configuration of the municipality and the balance of political power among different areas.

Over the last decades, the Municipality has been a partial exception to (leaning more to the left of) the dominant political trend in the Veneto region.

Recent changes in the Italian electoral laws have brought local administrations closer to citizens with the direct election of the mayor by the voters. The current local government has shown a strong interest for environmental issues.

The attempt to enhance public participation in this regard has been notable. In particular, in setting up a process for the definition of the local Agenda 21, a big effort is being made in order to define outcomes and strategies shared by the local stakeholders, broadly meant to cover all types of productive and cultural life. A Civic Forum for discussion among local administrations and public agencies, associations, research centres, representatives of productive forces, citizens groups, etc. has been created. The next envisaged step is the creation of working groups, formed on a voluntary basis, to work on specific themes (i.e. tourism; urban quality; environment, industrial production, and pollution). Each theme includes a number of issues.

Also in relation to industrial risks, and in particular major-accident hazards, the process of public participation seems well under way. The municipal office of civil protection has worked in close collaboration with citizen groups, to identify major problems, desired outcomes and possible strategies in order to decrease local vulnerability.

Influence of the industrial zone of Marghera

The Industrial Zone of Marghera and its port, one of the biggest European industrial sites, is the creation of an ambitious industrial project for the economic development of the entire Municipality and beyond. The concept focused on basic industry (metallurgical, chemical and petroleum products) utilizing primarily cheap imported materials (processed using locally available energy), which could be delivered directly by sea through a new port.

The first installations in the 20s and 30s were industries, which still exist today (e.g. coal distillation, rough glass production, production of sulphuric acid, phosphate fertilizers, wood products, mechanical and shipbuilding production, oil refining, and storage of mineral oils). During the 30s and 40s, non-ferrous metallurgical production (aluminium and its alloys, zinc) was developed and a major plant for ammoniac production of fertilizers, using coke-oven gas, was established.
After the Second World War, the original industrial zone became saturated, and a second area was planned. Also, a new canal was dragged from Porto Marghera to the Malamocco harbour entrance, in order to redirect traffic away from the historic city of Venice, and a new oil terminal was located in the Southern section of the lagoon. The expansion of the Zone, for the installation of petrochemical activities, refractory materials production and electric energy, refining of alimentary oils and wood manufactures, led to considerable increase in employment. In turn, this contributed to a considerable expansion in the total resident population, which grew up to the late 60s. As already mentioned, population in the industrial zone has been declining since then, due to a relative economic stagnation plus important increases in the productivity of labour.

The composition of activities within the Industrial Zone indicates the continued major importance of petroleum and its derivatives, phosphates and fertilizers, chemical products and, to a lesser degree, metals. However, a more detailed examination shows a relative decline in areas such as refinery inputs, minerals/scrap metal use and salt, and an increase in agricultural products, chemical products and metal goods. It also shows considerable changes within industrial categories due to rationalisation, closure, process and product changes, and a greater emphasis on tertiary activities.

Currently, there are approximately 300 firms within the Zone, of which 61 belong to national industries and 36 of these belong to large corporate groups (Iri, Eni, Efim, Enimont). These large groups account for 70% of total employment in the Zone and occupy 79% of its total area.

**Increasing commuting distances and volumes**

One of the most significant developments in recent years is that, because the mainland is no longer able to satisfy the need for work and housing (as it has in the past), the population movement covers a much larger metropolitan area that includes also the nearby cities of Padua and Treviso, and it generates a daily commuting problem.

**Heavy motorboat traffic**

The historical centre is connected to the mainland by two main bridges, one for rail traffic, and the other for motor vehicles. The estuary, i.e. the small islands, can be reached only by boat. In the historical centre and in the whole area of the lagoon, there is heavy motorboats traffic, both public and private, which increases significantly in the summer for the transportation of residents and (mostly) tourists. The average number of tourists has been calculated at about 20,000 visitors a day, peaking to 60,000 tourists during some days in the summer months.
History of Venice (the ‘myth of Venice’)

Reacting to their physical settings and to diverse cultural influences, the ancient Venetians consciously designed their city as an exceptional place. They regarded it as a divinely ordained centre of religious, civic, and commercial life, a community blessed by St. Mark, protected by its lagoon, and governed by a balanced constitution incorporating monarchy, aristocracy, and republican liberty. Historians refer to this perception as the "myth of Venice." The architecture of the city (especially in the Renaissance) purposely emulated republican Rome, and the great rituals of state publicly expressed the myth.

Just as the city’s architecture reflects notions of Venice as a place for public ritual, so, too, Venetian painting evokes the “myth of Venice”.

To the extent that some modern form of this myth is embedded in the cultural values of the inhabitants of Venice, it might become a powerful driving force for implementing a shared vision.

Policy-makers

This factor had not been mentioned in the initial list, but its relevance, at least in terms of action by omission, is clear, particularly for the unfolding of some scenarios. It includes the local, regional and national levels.

References


APPENDIX 3: Visions About VISIONS - Materials Produced By The Focus Groups

Here we describe the activities of the JRC team within the VISIONS project. During the project a social research activity has been planned, prepared and conducted in Venice, Italy. From this process materials have been produced by the participants. In this section we present many of such material. However, thorough analysis of contents has been done in Chapter 5 - page 55 of the REPORT section. Further material is presented in the CD-ROM.

Thank you Donald Bain for reviewing the English version of the stories by focus group 4.
FOCUS GROUP 3

FOCUS GROUP 4

VISIONS - Adventures into the future
FOCUS GROUP 1 - FINAL STATEMENTS

- I soldi ci sono!
- Capacità di spesa manca.
- Compensare i costi della vita.
- Garantire sopravvenza e sviluppo delle attività artigianali.
- PARTECIPIAMO!!
- Rispetto dei tempi di Venezia.

- Money [in Venice] is not a problem!
- A strategic plan to spend the money is missing.
- Need for a mechanism of compensation for higher living costs.
- The survival and development of artisan activities must be guaranteed.
- Let's participate!!
- The “rhythms” of Venice must be respected.
FOCUS GROUP 2 FINAL STATEMENTS

- Salviamo Venezia dell' acqua alta
- Consentire il traffico accettabile per l'esigenza del 2000
- Mettere a disposizione dei Veneziani servizi che una città di 160 000 abitanti richiede
- Portare un ente d'altissimo livello culturale a Venezia
- Veneziani: Mettetevi d'accordo!!
- To save Venice from the high tides
- To allow a transport system that corresponds to today's needs
- To supply Venetians with enough services [health, etc.] to respond to the needs of a city with 160 000 inhabitants
- To bring to Venice a high-level cultural institution
- Venetians: get together!!
VISIONS OF VENICE IN 2050 BY FOCUS GROUP 4

Venezia regredisce

Nel 2050 Venezia è mantenuta da un computer che le fornisce l'energia per andare avanti. Un giorno questo computer va in tilt e scoppia, così tutta la sua memoria si cancella. Le parole in esso contenute formano un vortice che risucchia la città. A questo punto gli abitanti devono scappare e andarsene nelle isole della laguna nord, dove iniziano una nuova vita.

Venice goes back in time

In 2050 Venice is maintained by a computer that supplies the energy necessary to keep it going. One day the computer explodes and all its memory is cancelled. The words contained within it form a vortex that sucks up the city. All inhabitants have to escape to the islands of the northern part of the lagoon where they start a new life.
L'inquinamento di Marghera

Nel 2050 le fabbriche di Marghera scaricano le materie inquinanti nella laguna; anche la gente non ha rispetto per la loro città. La laguna è invasa dalla mucillagine e alcune isole sono ricoperte di rifiuti che sono trasportati dall'acqua. Per questo motivo, Venezia è protetta da una rete. Ma ad un certo punto la rete si rompe e la gente è costretta a scappare.

Pollution in Marghera

In 2050 the industries of Marghera discharge pollutants into the lagoon; also the people have no respect for their city. The lagoon is invaded by filth and some islands are covered by waste carried by the water. For this reason, Venice is protected by a net but this eventually breaks, forcing the people to flee.
L'onda anomala e la fuga dei Veneziani

Il 28 marzo a Venezia è arrivata un'onda anomala che ha distrutto il centro storico e tutti i monumenti più importanti. Gli abitanti sono stati costretti a rifugiarsi in altre città sulla terraferma e a portarsi via più cose possibili.

The freak wave and the flight of Venetians

On the 28th March a large freak wave destroyed Venice's historical centre and all its most important monuments. The inhabitants were forced to take refuge in other cities on the mainland taking whatever belongings they could with them.
La rovina di Venezia

Siamo nel 2050 e Venezia è quasi completamente in rovina: per colpa delle industrie che hanno causato l'effetto serra, piove continuamente e fiumi buttano sempre più acqua nel mare Adriatico. L'innalzamento del livello del mare causa acque alte sempre più pericolose e a Venezia è stato sempre più difficile vivere; a poco a poco i turisti non sono più arrivati. Venezia è diventata sempre più povera, non ci sono stati più soldi per restaurare case e palazzi. I Veneziani sono stati costretti ad abbandonare la città.

The ruin of Venice

We are in 2050. Venice is in ruins: thanks to the greenhouse effect caused by industry, it's raining continuously and the rivers are discharging more and more water into the Adriatic. The rising sea levels create increasingly dangerous high waters in Venice and so it becomes impossible to live there; also tourism gradually decreases. Venice becomes ever poorer and there are no funds to restore houses and palaces. The Venetians are forced to abandon the city.
Anno 2050: Venezia diventa una fabbrica

Nel 2050 Venezia è diventata una fabbrica perché si è molto mecanizzata e industrializzata. I cittadini hanno fatto una riunione e la maggior parte ha votato per “Venezia città industriale”.
Con questa votazione Venezia ha diminuito molti problemi, tra questi: l’acqua alta, gli scarichi fognari e la disoccupazione.
Però ne ha causati degli altri come: inquinamento atmosferico e acquatico, estinzione della flora e della fauna e perdita di ogni contatto con la natura.

Year 2050: Venice becomes a factory

In 2050, Venice becomes a factory because it has been very much mechanised and industrialised. Citizens have met and the majority has voted for “Venice, industrial city”. This has led to a reduction in Venice’s problems, for instance: high tides, sewage discharges and unemployment. However it has caused other problems: air and water pollution and flora and fauna extinction, as well as complete loss of contact with nature.
Gita a Venezia

Siamo viaggiatori del tempo e ci troviamo del 2050 la trascuratezza degli abitanti di Venezia ha reso la città un’enorme discarica.
È inquinata, sporca, ricoperta da immondizie e piena di scritte sui muri!
Quando ormai sembra tutto perduto, un’onda gigante travolge le strade: gli abitanti, disperati credono che sia la loro fine... ma, cambiano opinione quando vedono che l’onda ha pulito la città.
L’unico problema è che sono rimaste tutte le scritte.
I Veneziani allora ordinano ai loro robot di pulire tutti i muri. Dopo pochi giorni Venezia splende come uno specchio!
Andiamo ancora più avanti nel futuro con una strana scatola del tempo: il campanile di S. Marco parla e guida i turisti che visitano la città, le gondole volano e le carrozze portano i bambini al sole, tutti sono felici.
Ecco la Venezia ideale!!
Infine la scatola del tempo ci porta ancora più lontano, nel 3000! Tutta la città è tranquilla e anche noi possiamo andare a dormire.

Around in Venice

We are time travellers and we are in 2050 where we can see that the neglect of the Venetians has transformed the city into a landfill. It’s polluted, dirty, covered with waste and full of graffiti!
All of a sudden a gigantic wave invades the streets: the inhabitants are desperate thinking that this was the end... but, they change opinion when they note that the wave has cleaned the city. The only problem was that all the graffiti remained. So, the Venetians order their robots to clean the walls. Some days after, Venice was as splendid as a mirror!
We go on a bit further in time using a strange time machine: the bell-tower of S. Marco speaks and guides the tourists who visit the city, the gondolas fly and babies are taken to the sun, everyone is happy!
This is the ideal Venice!
Finally, the time box takes us still further, in 3000! The city is peaceful and so we can go to sleep.
Venezia nelle bolle d'aria

20 anni fa, nel 2030, a Venezia furono installati molti computer, tutti molto avanzati. Questi computer avevano previsto un'inondazione che avrebbe lasciato non sommersi solo altopiani, montagne e colline inondando le coste e le isole, tra cui Venezia. I Veneziani, per salvare la città, costruirono delle bolle di vetro di Murano, giganti e resistenti all'acqua, in cui vi racchiusero Venezia e delle fabbriche. Le fabbriche inquinavano con i loro scarti l'acqua, lasciando pulite le bolle. Rimasero vivi pochissimi pesci, che si adattarono a queste sporzie. E questa è la ragione per cui ora siamo rinchiusi qui dentro. Nel 2001 era molto più bello: niente era sommerso completamente dall'acqua e i tramonti erano visibili e, a dir poco, stupendi!!!!!!!.

Venice inside air spheres

20 years ago, many advanced computers were installed in Venice. These computers predicted that there would be a flood which would leave submerged plains, mountains and hills, as well as coastal zones and islands, including Venice. To save their city Venetians built gigantic water resistant Murano glass spheres, in which they enclosed Venice and its factories. The factories' pollution was sent out of the spheres, which stayed clean. Few fish have survived and those who made it adapted to the sewage. And that's the reason why we are now shut up in these spheres. In 2001, everything was much better: nothing was completely submerged by the water, the sunsets were visible and to, put it mildly, they were stupendous!!
APPENDIX 4: THE BROADER CONTEXT - GLOBAL SCENARIOS

Here we describe the activities of the JRC team within the VISIONS project. During the project a number of scenarios for Venice in 2050 have been produced. An exercise of comparison and integration with higher level scenarios has been carried out. Here it is described such comparison with global scenarios. - See Chapter 6 (page 78 of the REPORT section) for comparison and integration with European scenarios.

This section is taken from the report by Gallopín (2000), written to fulfil contract no. European Commission no. 15072-1999-06 F1El ISP SE.
THE BROADER CONTEXT: GLOBAL SCENARIOS

This section is taken from the report by Gallopín (2000), written to fulfil contract no. European Commission no. 15072-1999-06 F1EI ISP SE.

Many scenarios have been produced at the European and global levels. At the European ones, the scenarios developed for the VISIONS project have been considered in the integration done on Chapter 6. At the global level, those developed by the Global Scenario Group (http://www.gsg.org) will be used in this analysis. Both of these sets, while developed independently, are comprehensive enough to allow meaningful comparisons.

In the remaining of this section a (brief) characterization of the global scenarios will be made followed by the discussion of the compatibility between the scenarios at different levels.

GLOBAL SCENARIOS

The global scenarios discussed here have been developed by the Global Scenario Group. A full description and discussion is available in Gallopín et al. 1997, Gallopín and Raskin 1998, and Raskin et al 1998, as well as in the Internet (http://www.gsg.org).

The scenarios are grouped into three categories: Conventional Worlds (assuming a continued evolution involving the expansion and globalisation of the dominant values and socio-economic arrangements of industrial society); Barbarisation scenarios (contemplating the possibility that the social, economic and moral underpinnings of civilization deteriorate, as problems overwhelm the coping capacity of both markets and policies); and Great Transition scenarios (exploring visionary solutions to the sustainability challenge, including fundamental changes in the prevailing values as well as novel socio-economic arrangements).

Figure A-4.1 provides a qualitative overview of the changes in six basic dimensions of the scenarios and their variants.

Conventional Worlds

In the Conventional Worlds scenario, the values and socio-economic arrangements of the industrial era continue to evolve without major discontinuities; competitive markets and private investment remain the engines of economic growth and wealth allocation; the globalisation of product and labour markets continues apace.

Consumerism and possessive individualism prevail as primary motivation for human behaviour. The Reference (or Business-as-usual) variant assumes that current policies (or lack of policies) are maintained.
Figure A-4.1. The global scenarios and variants (Source: Gallopín et al., 1997)
The economies of developing countries grow more rapidly than those of the OECD countries, but the absolute difference more than doubles as incomes in rich countries soar.

The structural shift in economic activity from industry to services continues. The share of materials-intensive industries eventually decreases everywhere, consistent with recent trends. The diffusion of new technology leads to more efficient use of energy and water, growing utilization of renewable energy resources, and cleaner industrial processes. However, pressure on resources and the environment increases as the greater scale of human activity overwhelms these resource efficiency improvements.

Several types of destabilizing risks can be identified in this scenario. First, the cumulative loads on Earth’s biogeochemical cycles and ecosystems could well exceed natural assimilative capacities. Second, heightened pressure on natural resources could lead to economic and social disruptions and conflicts. Climate change would further complicate matters. Third, social and geopolitical stresses would threaten socio-economic sustainability; the persistence of poverty on a large scale and the continued inequality between and within nations (exacerbated by environmental degradation and resource constraints) would undermine social cohesion, stimulate migration, and stress international security systems.

The Reference scenario results in increased environmental and socio-economic stress and a large loss of resilience. Events that were absorbed in the past are now capable of overwhelming the system, resulting in a global crisis interlacing environmental, social and economic factors.

Policy Reform scenarios maintain the essential assumptions of the Conventional World paradigm. But in contrast, they assume the emergence of a public consensus and strong political will for taking action to ensure a transition to a sustainable future. Social and environmental sustainability goals are agreed upon, and an integrated set of initiatives are crafted and implemented including economic reform, regulatory instruments, social programs, and technology development.

The critical elements in achieving the poverty reduction targets in the Policy Reform scenarios are two types of equity increases: greater equity between regions and greater equity within regions and countries.

The social targets are met through a balanced combination of effects — relatively strong regional economic growth, significant but gradual motion toward international equity and maintaining national equity at close to current levels. Though the gap between rich and poor nations is far from closed, the level of international equity becomes twice that of the Reference scenario.

The sustainability target for climate change is set as an upper limit on global temperature change of 0.1°C per decade.
Achieving the associated carbon emission constraints requires a significant improvement in the way energy is used and produced; the Policy Reform scenario incorporates a variety of measures for achieving energy intensity improvements. The second prong of a sustainable energy strategy is fuel switching to a greater reliance on renewable energy sources, with natural gas as a near-term bridge fuel.

The challenge of simultaneously meeting all social and environmental criteria is formidable. Increased agricultural requirements must be met under multiple constraints: forest and habitat protection reduces the scope for the expansion of agricultural land; decreasing the level of stress on water resources in water scarce areas limits the use of irrigated water; and reducing land degradation and chemical inputs to agriculture requires more sustainable farming practices, while maintaining yield increases.

The tension between two assumptions in the scenario will not be easily reconciled — the continuity of dominant values and institutions, on the one hand, and the greater equity for addressing poverty reduction, climate protection, and other goals, on the other hand.

Failure to address adequately the challenges posed by the CDS could result in incremental worsening of the global situation (with some countries or groups doing better than others), but also in drastic re-accommodations involving vicious circles leading to nasty images of the future in which even the “winners” are losers. These possibilities are explored in the Barbarisation scenarios.

**Barbarisation Scenarios**

Like the Conventional Worlds scenario, the Barbarisation scenarios are driven by the ascendancy of global economic forces, but in this case humanity is unable to manage the resulting change and conventional institutions ultimately unravel. The number of people living in poverty increases while the gap between rich and poor grows.

This leads to massive waves of legal and illegal migration to rich countries (and to areas of prosperity within poor countries).

Despite some improvements in the richest countries, environmental conditions continue to worsen. Deepening rural poverty accelerates soil degradation and deforestation. Conflicts over water emerge among countries that share rivers. Already brittle marine fisheries collapse under the additional pressure, depriving a billion people of their primary source of protein. Climate change causes hardship for subsistence farmers in many regions. Famine becomes more frequent and more severe, while the response capacity of relief agencies declines. Mortality rates increase as a result of the growing environmental degradation, which aids the emergence of new diseases and the resurgence of old ones.

VISIONS - Adventures into the future
Owing to the growing inequality, increased morbidity, and reduced access to natural resources, social tensions become more widespread and intense.

Politically, a jagged pattern of city-states and nebulous regional formations emerges. Some formerly prosperous industrial countries join the ranks of the impoverished.

*Barbarisation* can lead to two basic outcomes. In the *Breakdown* variant, it is simply impossible to control the tide of violence flowing from disaffected individuals, terrorist organizations, ethno-religious groups, economic factions, and organized criminals. Civil order largely breaks down, ultimately leading to a general collapse of social, cultural, and political institutions along with the market economy.

In the *Fortress World* variant of the *Barbarisation* scenario, powerful regional and international entities manage to impose some form of authoritarian order on the populace at large. In this variant, a well-off elite flourishes in protected enclaves (mostly in the historically rich countries) while the majority remains mired in poverty and denied basic human rights.

Pollution is kept low within the fortress by means of increased efficiency, recycling, and external dumping; outside the fortress, environmental conditions deteriorate dramatically.

**Great Transitions**

This is a scenario in which humankind transcends the industrial and consumerist culture of the present without descending into chaos. In the *Eco-communalism* variant, a network of largely self-sufficient communities replaces the huge, highly interdependent institutions of the modern world. In this "small is beautiful" and *bio-centric* vision, an ethic of voluntary simplicity and local autonomy comes to dominate. Material consumption levels fall in wealthy areas as a craft economy rises to complement production from small-scale and locally owned facilities and farms while outside economic links are minimal. Proximity to nature becomes highly valued as a spiritual bond that unifies each community.

The *New Sustainability Paradigm* balances the cosmopolitanism of a global outlook with a strong sense of community, egalitarianism, and environmentalism. The consumerism of the *Conventional Worlds* scenarios gives way to an emphasis on qualitative goals such as education, leisure, the arts, and the experience of nature, service, and spiritual pursuits. The flow of energy and materials through the economy is radically reduced in wealthier areas through efficient technologies, lower-material consumption lifestyles, and the widespread use of renewable resources. Poorer regions rapidly converge toward this revised concept of development. Values, institutions, and the very notion of the good life have indeed undergone a great transition.
The values of simplicity, tranquillity, and community begin to displace those of consumerism, competition, and individualism. Many people opt to work (and earn) less to free up time for study, art, relationships, personal and spiritual growth, and myriad hobbies, crafts, sports, and other pastimes.

Young people around the world discover a collective identity in a new idealism that is directed toward creating a planetary community. The Internet becomes an important forum for this new consciousness, helping to forge a sense of unity.

Equity and sustainability, rather than economic growth per se, become the goals of development. Material simplicity is the preferred lifestyle, while ostentatious consumption is viewed as primitive and a sign of bad taste. A new planetary deal is forged, including international agreements on redistribution of wealth.

Integrated settlement patterns place home, work, shops, and leisure activities in closer proximity. Dependence on the automobile is reduced radically, and a sense of community connectedness is re-established. For many people, the town-within-the-city provides the ideal balance of a human scale and access to cosmopolitan culture.

Small towns also become popular as communication and information technologies increasingly allow for the decentralization of activities.

In the new economy, markets still play a major role in achieving efficiencies in the production and allocation of goods and services, but the aggregate level of economic activity is constrained by social, cultural, and environmental goals.

Experiments with alternative forms of governance proliferate from local to global scales. Global governance is based on a federation of regions that effectively fosters cooperation, security, and environmental health through a rejuvenated United Nations and a truly global civil service.

**COMPARISON**

A direct comparison between the Venetian and the global levels is presented in Table A-4.1. Gotham City is compatible with the global Reference scenario (indeed, one could argue that it is already the everyday life for millions of people of the world), with the Breakdown scenario, and with the Fortress World (in this case, for the excluded population). Venice Inc. is also compatible with the Reference scenario, and, in its more positive features, with Policy Reform. It is also compatible (for those living within the fortress) with the Fortress World.
<table>
<thead>
<tr>
<th>GLOBAL SCENARIOS</th>
<th>Gotham City</th>
<th>Venice Inc.</th>
<th>City-Machine</th>
<th>Cyberia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbarisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional Worlds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy Reform</td>
<td></td>
<td></td>
<td>(within fortress)</td>
<td></td>
</tr>
<tr>
<td>Breakdown</td>
<td></td>
<td></td>
<td>(within fortress)</td>
<td></td>
</tr>
<tr>
<td>Fortress World</td>
<td></td>
<td>(within fortress)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eco-communalism</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Great transitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Sustainability Paradigm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table A-4.1. Compatibility between Venetian and global scenarios
From the comparisons, it is clear that the likelihood of materialization of any of the Venetian scenarios would very much depend upon which of the higher-level scenarios unfold. While the upper-level processes do not necessarily determine lower-level dynamics (in general they do not), the upper-level usually acts as the context defining the set of constraints or boundary conditions within which the lower-level systems must operate (Gallopín, 1991).

A major consequence of this is that the sustainability of any of the Venetian scenarios cannot be defined only self-referentially. While some scenarios might be intrinsically unsustainable (or sustainable), in most cases the discussion on sustainability of a given Venetian scenario needs to take into account the higher-level domain that constrains its degrees of freedom.

In other words, a Venetian scenario such as, e.g., Cyberia, which could be thought to be intrinsically sustainable, may prove to be indeed so under compatible European scenarios, but it may represent a fleeting social experiment encountering increasing higher-level resistance is it unfolds under an incompatible higher-level regime.

Of course, it may be said that the lower-level scenario might induce changes in its context of such a magnitude that overthrow the higher-level dynamics. However, generally this can only happen under very special circumstances that cannot be taken for granted (Gunderson et al., 1995).

References


