



VROM Young Planning Professionals' Workshop
Istanbul, 11 - 14 September 2006



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INTRODUCTION

PREFACE

Ministry of Housing, Spatial Planning and the Environment
The Netherlands

A few days in advance of the annual international congress, ISoCaRP yearly organises workshops attended by young planning professionals from all over the world. The Dutch Ministry of Housing, Spatial Planning and the Environment (VROM) gives financial support to realise the VROM Young Planning Professionals' workshop. In this way the Dutch central government creates the chance to make professional skills effective in an international setting and gather international experience in working together in a workshop of several days. The discussion about the results of the workshop in a plenary session on the ISoCaRP congress gives added value for the planners. They can build up a global network, which is one of the objectives of ISoCaRP.

VROM Young Planning Professionals' Workshop 2006

In Istanbul, Turkey, six young planning professionals have had the opportunity to work together on an actual theme: the global climate change and the (regional and local) consequences of the (negative) effects for spatial planning. The planners shared their knowledge and experiences with each other, and also gave an impression of the situation in their home country.

In three days they have worked on a concrete policy case for the Dutch government at Yildiz Teknikal University of Istanbul. Afterwards the results were presented to ISoCaRP congress members on Thursday 16th of September 2006.

The main issue to be discussed in the workshop was how to overcome (some of) the problems, which are related to a global changing world. Climate change becomes more and more a real threat for people and animals living in vulnerable delta regions and coastal areas. To anticipate to these trends and to minimize the possible disastrous consequences for our future, we have to think about how to manage the (negative) effects and to create a sustainable (climate proof) design for vulnerable and densely populated delta regions in the world. At the interface of climate change and space, important questions and challenges arise that treat both risks and chances. The case is a broader one than a mere spatial. Therefore this topic unites different approaches and points of view. In the workshop the backgrounds of the planners were a good match to deal with these big issues, which may be a realistic threat for modern life.

Assignment

The central question was how to deal with risks and opportunities for a strategic design of densely populated river deltas and coastal areas.

The assignment for the planners was: Design a sustainable strategic vision, consisting of a spatial concept and a strategy (actions, resources and time) for vulnerable delta regions and coastal areas, which have to deal with the (negative) effects of climate change, to provide a sustainable situation for the next decades.

Motto of the planners workshop was summarised in the following statement: give 'ten golden rules' for adaptation of space to the (negative) effects of climate change in urbanized, vulnerable (delta and coastal) regions.

Participants

Three days the young professionals worked on the assignment. We were positively surprised by their enthusiasm and effort, and the fact that they immediately related to the context of this difficult topic and this global issue. Each participant had his/her own point of view and contributed to the discussion. Their proposed solutions for the issues of the assignment and the questions they had to deal with were different. The different views and backgrounds of the participants seemed to be of extra value for the discussion during the workshop days and for the final results. The critical view of the young planners resulted in some inspiring ideas for the Dutch Ministry of VROM about the way they have to deal with in the National Program "Adaptation Space and Climate" (ARK). In the presentation of the planners, the ten golden rules were the concluding results of an intensive process during the workshop days and we will remember these rules for a long time!

It was a great pleasure for us to work with the following young planning professionals:

- Peter Vanden Abeele (Belgium)
- Rui Duarte (Portugal)
- Jean-Philippe Lens (Belgium)
- Penny Pang Wai Ki (Hong Kong)
- Magali Volkwein (France)
- Elien Wierenga (The Netherlands)

and the ISoCaRP coordinators:

- Jeanne Wolfe (Canada),
- Neaz Rahman Khondker (Bangladesh)
- Mehmet Doruk Özügül (Turkey)

and learning from their (international) point of view about relevant aspects of the theme of the workshop.

The VROM Young Planning Professionals' workshop 2006 was under the authority of the Dutch Ministry of Housing, Spatial Planning and the Environment (Susanne Vleeshouwers and Meinte de Hoogh, in coordination with Emmy Bolsius) in association with the International Society of City and Regional Planners (ISoCaRP).

Finally, we would like to thank the ISoCaRP-team, especially Judy van Hemert for the professional support and organisation during the workshop and the preparations beforehand.

The Hague, The Netherlands
November 2006

CLIMATE CHANGE IN DELTA REGIONS. INTENSIVE URBANISATION IN VULNERABLE DELTA REGIONS AND COASTAL AREAS

Short introduction on the
VROM Young Planning Professionals' workshop 2006
In cooperation with ISoCaRP
10 - 14 September 2006 in Istanbul, Turkey

The second VROM Young Planning Professionals' workshop in September 2006 was once again an unique meeting and source of inspiration to the participants.

How to deal with the (negative) effects of climate change in relation to urbanisation in vulnerable delta regions and coastal areas and adaptation of these areas to the effects of climate change; this has been the topic of the workshop in Istanbul. To provide a sustainable situation for the next decades we have to think not only about the problems, but also keep in mind that the opportunities and solutions are not only technical. We also need measures that deal with knowledge, organisation, spatial issues et cetera.

A strategic and sustainable design for those vulnerable regions was the concrete assignment of the workshop and ten golden rules for adaptation of space to climate change were the result of the work effort of the Young Planning Professionals (YPP's).

Although the weather was not that good at the first day- clouds and in the afternoon some rain- the first meeting with all YPP's was hart warming and in a relaxed setting.

First of all the Dutch Consul-General in the Palais Neerlandais in Taksim city centre welcomed us. In the old chapel of the Palais, the warm reception and the introduction to the theme of the congress was a good way of melting together all those different cultures of the YPP's. Istanbul, which is a perfect example of a bridge between the European Union and Asia, couldn't be better chosen to start three intensive, but inspiring and long working days with six young professionals. This year unfortunately, two planners didn't get their visa and finally missed the workshop.

As an introduction to the theme of the workshop, there were three presentations about countries, which have to deal with problems of urbanisation in areas that are vulnerable for climate change. Meinte de Hoogh, from the Dutch Ministry of Spatial Planning (VROM) introduced the National Program "Adaptation Climate and Space" in the Netherlands. Mehmet Doruk Özügül, our Turkish

host, introduced the Turkey case and Neaz Rahman Khondker, ex-YPP, told us a lot about the Bengal Delta (between India and Bangladesh) and showed us slides of Bangladesh and the life in his home country.

The YPP's prepared themselves very good and presented the homework they had written in advance. They shared their knowledge about their home country and how they are dealing with the topic of the workshop. It was a long, but very inspiring session in which we learned a lot about the world and especially about Europe.

Then we started to work out the assignment and to prepare the presentation for the congress. Doruk was our private guide and he showed us with a walking tour a part of Istanbul along the Bosphorus. A dinner at the end of the day in Taksim city was a good 'finale' of the first working day.

The second day was only just getting started, when we had to go to the planning department of Istanbul and got a series interesting presentations about the metropolitan area of Istanbul and the planning on regional scale. After the lunch we got to work again.

The YPP's worked out their matrix with problems, opportunities and solutions and made recommendations how to deal with climate change. Elaborating the matrix into recommendations was the job of the second day.

Doruk guided us that evening to the Bosphorus again and this time to the 'end' of the European continent. With the hanging bridge above us, we had dinner along the Bosphorus, enjoined the fireworks on the water and the lovely surroundings of that special place.

The third day was a tough working day for the YPP's to be concluded with clear recommendations and prepare their presentation for the congress. Finally, late in the evening they were ready and at eleven o'clock they went to Taksim to have a meal. Tired but content we could close of an inspiring and good workshop with ample effort of everyone.

This means that the fourth and last day could be used to visit some highlights of Istanbul: the Blue Mosk, the Haghya Sofia, Suleyiman mosk, the Great Bazar and Spice Bazar and a walk along the bridge over the Golden Horn.

At the end of this day the introductions of the three workshops were at Yildiz Teknikal University. Besides the VROM YPP workshop, there was also an ISoCaRP YPP workshop with a local case of Istanbul and a workshop with students of the Berlin Architecture Academy. The YPP's gave an excellent and clear presentation with an overview of their working results. Afterwards a dis-

cussion with the more experienced professionals (congress members) gave a special and realistic surplus value of the results and thoughts and some ideas to work out within the Ministry of VROM in the Netherlands.

Looking back, I think the YPP's have done a good job with some interesting results, which we can use with the current projects of the Dutch Ministry of VROM. Some people came up with concrete suggestions to elaborate further on the work the YPP's did. A tough working process, three days full of impressions and information on several countries from all over the world, learning the group with contentness about the results and in short you have the YPP's 2006. Learning from each other, discussing a lot of things and having fun with other young people from all over the world, is a great experience for all of us and I think we can use this in our further career and own personal life.

Susanne Vleeshouwers

Ministry of Housing, Spatial Planning and the Environment
The Netherlands



Where the rural and urban environment as well as government buildings really matter.

Where policies are developed, implemented and enforced. Knowing that, in a small country like the Netherlands, it pays to think big.

Housing, spatial planning and the environment

The main overall objective of the Ministry of Housing, Spatial Planning and Environmental Management (VROM) is: 'working for a permanent quality of the living environment'. The VROM is responsible for co-ordinating environmental policy at government level. However, unlike in many other countries several other ministries have environmental tasks too, for example in the field of water quality and nature management.

Issues regarding spatial planning, environmental management and housing are mutually dependent and where possible preferably mutually supportive. A good example is urban planning. Towns have to be compact and at the same time complete entities. Urban centres must offer a wide range of facilities. Besides being compact, they have to provide green space, a relaxed atmosphere, proper drinking water, a good quality of life. The presence of those elements help to curb the growth in car-use and mobility generally and indirectly reduce the transformation of land into urban areas.

Spatial Planning and Spatial Development

The Netherlands is a small country that is continually changing in a globalising world. Spatial policy has to respond to that situation. It is important to look to the future from the baseline of the past and present when developing plans for land usage. Spatial policy helps ensure strong cities and vibrant rural communities. Government policy must safeguard important national and international values like nature, landscape and cultural history and increase public safety while at the same time allowing "space for development".

The government considers the following issues of spatial planning of vital importance:

- vibrant and complete cities;
- a countryside with an intact ecological character;
- sustainable economy and renewable energy. The policy focuses on infrastructure, education and information technology, modernising logistics and distribution, minimising the need for transport and developing multi-modal transport systems;
- mobility and infrastructure. A balance of infrastructure and environment, maintaining the leading position in international transport of the Netherlands. A relevant issue is the improvement of the public transport inside and among the major cities that together form a network. Car traffic regulations are based on the principle: 'those who drive more pay more';
- Schiphol Airport and Rotterdam Harbour. For both mainports a checked growth; 'sustainable mainports', reckoning with the environment;
- water management: the availability of clean drinking water, the threat of flooding, coastal erosion, falling water tables and progressive salinization of groundwater are problems that have to be dealt with. Emphasis is placed on the recreational qualities of water. Water is an increasingly valuable commodity.



THE WORKSHOP THEME

Everywhere in the world urbanisation takes place in the great river deltas and coastal areas. The water may come from all sides, while the urbanisation increases in the low, densely populated delta regions. At the moment you can see the largest growth of cities in these coastal and delta areas. Here you can find the most fertile land for agriculture and the most strategic locations for port development and industrialisation. Living on the waterfront is an attractive element in the new urban renaissance to counteract trends of idling and pauperizing of cities and to attract a new stream of inhabitants, tourists, services and business to the cities. However the water becomes more and more a real threat.

In regions all over the world people have learned to cope with extreme climate events. Countries have developed infrastructure and legislation to protect people from floods and droughts. Protective measures differ widely between regions, countries and continents – as so do risks.

Present global climate change means that key climate and hydrological variables will change. We cannot assume anymore that the future climate can be predicted on the basis of past patterns.

Climate change and sea level rise present major challenges to each of the world's delta regions, which together harbour 70% of the world's population and economic resources.

Under the influence of climate change the sea level rises and a large amount of rain make rivers flood more often and further outside their riverbanks. The negative effects are not only because of the (growing rate of) sea level rise (because the temperature of seawater warms up and expands, but also because of (s)melting glacier ice. On the other hand a change in water use and water management on the different continents could be a reason. In addition, in many places on earth the sea level is rising and simultaneous there is a matter of land subsidence. Besides this in some parts of the world extremely dry periods alternate with very wet and extreme rainy periods, and other regions have to control heavy tornadoes or drought.

We have to think seriously about the negative effects of the changes in our climate and the possible disastrous consequences for our future. So we have to anticipate to these trends and to design a sustainable future for these densely populated delta areas and design climate proof waterfronts.

At the interface of climate and space important questions and challenges arise

that treat both risks and chances. The problem case is broader than a mere spatial one, it is also a social and economic one, and solutions are not only technical, but also spatial, financial (for instance insurance and solidarity), organisational and they all have to do with knowledge. This is why this is a topic that unites different approaches and points of view and for sure can offer enough inspiration and ideas to people living in a region where they have to prepare (themselves) for the (disastrous) impacts on climate change.

The main issue to be discussed in the workshop is how to overcome some of the above problems, and therefore to think about how to manage the negative effects and to create a sustainable design for vulnerable and densely populated delta regions in the world.

The central question is: how to deal with risks and opportunities for a strategic design of densely populated coastal areas and river deltas.

Taken into account a changing global world in which climate change becomes more and more a real threat for people and animals living there.

By means of the introduction of three cases we will link the VROM Young Professionals' Workshop to the congress theme 'Cities between integration and disintegration' and to give inspiration for the workshop and the final results. The cases concentrate on Randstad Holland (The Netherlands) (high standard of living), Istanbul (Turkey) (medium standard of living) and Bangladesh (low standard of living).



THE WORKSHOP

THE ASSIGNMENT

Design a sustainable strategic vision, consisting of a spatial concept and a strategy (actions, resources and time) for vulnerable delta and coastal areas, which have to deal with the (negative) effects of climate change, to provide a sustainable situation for the next decades.

Prepare a matrix with possible measures for adaptation and make a differentiation in social, economical, ecological and cultural aspects and in the subdivisions practical value, perception value and future value. (Keep in mind that solutions are not only technical, but also spatial, financial, organizational and they all have to do with knowledge. They can be undertaken through governmental organizations as well as through private organizations or in cooperation).

Give ten golden rules for adaptation of space to climate change to deal with the (negative) effects of climate change in urbanized, vulnerable (delta and coastal) regions.

Homework

Please write a Home Country Introductory Paper related to the theme of our YPP's Workshop. We would like to know:

Which are the measures taken or foreseen in your home country to adapt to the (negative) effects of climate change (a.o. sea level rise, rise of the temperature, extreme amounts of rain, hurricanes/ tornadoes and tsunamis, land subsidence) in urbanized, vulnerable (delta) regions?

Do you consider these measures (taken and foreseen) are sufficient? Do they include a spatial design with sufficient (spatial) quality? If not, what do they lack in this field and which suggestions can you give (completion of measures and coherence of design).

And which are the opportunities these measures offer for a (future) sustainable use of the area you have chosen (in a broader context of the regional/ national perspective) and how can you come to priorities for those measures?

THE PARTICIPANTS & COORDINATORS

PARTICIPANTS

Peter Vanden Abeele	Belgium
Rui Duarte	Portugal
Jean-Philippe Lens	Belgium
Magali Volkwein	France
Penny Pang Wai Ki	Hong Kong
Elie Wierenga	The Netherlands

TEAM OF COORDINATORS

Introduction of cases of Turkey and Bangladesh

Mehmet Doruk Ozügül (Turkey), representative on behalf of the Turkish Organisers
Neaz Rahman (Bangladesh), ISoCaRP Bureau Member of Bangladesh

Supervisors

Meinte de Hoogh (The Netherlands), Ministry of Spatial Planning (VROM)
Susanne Vleeshouwers (The Netherlands), Ministry of Spatial Planning (VROM)

Coach

Jeanne Wolfe (Canada), ISoCaRP Scientific Committee Member

Isocarp

Fernando Brandão Alves (Portugal), ISoCaRP Vice President, function: Young

THE WORKING METHOD

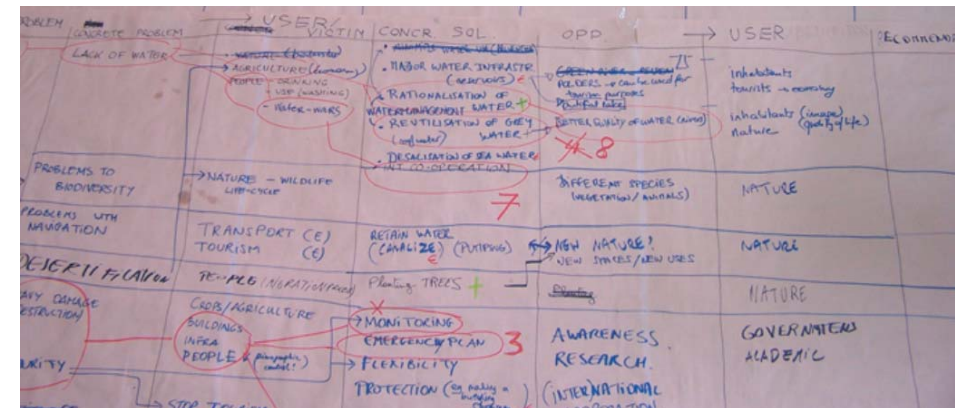
1. Presentations of the cases of the team of coordinators: Istanbul and Bosphorus Region, Turkey by Mehmet Doruk Ozügül, Bengal Delta, Bangladesh by Neaz Rahman and Randstad, The Netherlands by Meinte de Hoogh.
2. Presentation of the homework assignment by the participants.
3. Open discussion on all the effects, problems, solutions and opportunities of climate change.
4. Selection of five general problems and classification of the different effects, problems, solutions and opportunities to these general problems.
5. Construction of the Matrix.
6. From the Matrix and a discussion about different approaches for taking measures, we extracted the **TEN GOLDEN RULES**.



THE MATRIX

General problems	Concrete Problem	Victims	Concrete Solution	Opportunities	Beneficiaries
TEMPERATURE RISE					→
SEA LEVEL RISE					→
DROUGHT				→	
SEVERE WEATHER EVENTS			→		
HEAVY RAINFALL		→			

Climate change manifests itself through different climatological problems. In the matrix five general risks were identified and for each of them concrete problems and resulting victims were listed up. Many of the climate changes influence more than one user group of the delta region. But for every concrete problem a concrete solution can be found. Some of these solutions are very technical measures countering the climate change effect and reducing the natural risk (building dikes and reinforcing dunes to prevent flooding). Other concrete solutions try to solve the impact of the climate change (actions like fresh water flooding in order to decrease salinity of soil). But one can also consider the concrete problems of the climate change, that is to say the effect it has on our surroundings and the changes made in it, as a positive element generating new opportunities. Different opportunities have been listed and for each of these opportunities the beneficiaries have been determined.



General problems	Concrete problems	Victims	Concrete solution	Opportunities	Beneficiaries
TEMPERATURE RISE	Public health	<ul style="list-style-type: none"> - People - Animals 	<ul style="list-style-type: none"> - Publicity campaign - Improve the health system 	<ul style="list-style-type: none"> - Awareness to bio climatic solutions (solar energy, geothermic, wind energy, ...) - Tourism in area's where the climate for tourism is improved by temperature rise - New opportunities for settlement in the northern cold zones 	Economy
	Air quality change (Ozone, CO ₂) Loss of visibily (Smog)	People	<ul style="list-style-type: none"> - Development of new energy sources (research) - Monitoring (and reacting on that to improve air quality) - Planting trees to improve air quality - Taxation / Incentives to create awareness - Changes in mobility (reduce traffic, improve public transport) 		
	Rising humidity and precipitations	People (in wet area)		<ul style="list-style-type: none"> - More life in dry area's (de-desertification) - More sweet water 	People

General problems	Concrete problems	Victims	Concrete solution	Opportunities	Beneficiaries
SEA LEVEL RISE	Loss of land (erosion)	<ul style="list-style-type: none"> - Agriculture - Urban and port area - Tourism (coast) - People 	<ul style="list-style-type: none"> - Strengthening dunes by sand-suppletion and beach nourishment - Giving part of the land back to the water (eg. intertidal zones) - Artificial reefs / islands in front of the coast to protect the coast - Plantation - Building dikes - Evacuation plan ...dynamic solutions 	<ul style="list-style-type: none"> - Giving land back to the water with intertidal zones = more landscape diversity, interesting area's for tourism - Look for new types of architecture that is more flexible and can adapt to the changes (research) - Alternative energy (using the tides) 	<ul style="list-style-type: none"> - Tourism (local economy) - Inhabitants - new types of living environment
	Salinity of soil	<ul style="list-style-type: none"> - Biodiversity - Agriculture - Groundwater 	<ul style="list-style-type: none"> - Retaining rain - Fresh water flooding - Internal dams 	<ul style="list-style-type: none"> - New biodiversity - New types of agriculture (salty meat, specific crops...) - Alternative energy (using salinity) 	Agriculture
	Destruction of heritage	<ul style="list-style-type: none"> - Culture - Tourism 	<ul style="list-style-type: none"> - Build dikes and dams to protect the area - Move the valuable buildings (Egypt) 	<ul style="list-style-type: none"> - Make multifunctional use of the dikes and dams 	Tourism
				De-desertification (more water in dry area's)	<ul style="list-style-type: none"> - Economy (more possibilities to build in dry area's) - Ecology

General problems	Concrete problems	Victims	Concrete solution	Opportunities	Beneficiaries
DROUGHT	Lack of water	<ul style="list-style-type: none"> - Agriculture - People (drinking, use, water wars) 	<ul style="list-style-type: none"> - Major water infrastructure (tanks ...) - Rationalization of water - Reutilization of grey water - Desalinization of sea water - International cooperation to prevent water wars 	<ul style="list-style-type: none"> - Holding water in wet periods for the dry periods (using polders and other artificial lakes) - Better quality of water (rivers) from reutilization of grey water 	<ul style="list-style-type: none"> - Inhabitants - Tourism - Hydrosphere
	Loss of biodiversity	Nature and wildlife		New natural species	Nature
	Problems with navigation because of low water level	<ul style="list-style-type: none"> - Transport - Tourism 	Retain water (canalize)	New spaces / new uses	
	Desertification	People (migration process)	Plantation	New natural species	Nature
SEVERE WEATHER EVENTS (forest-fires, storms, hurricanes)	Heavy damage	<ul style="list-style-type: none"> - Crops / agriculture - People - Buildings - Infrastructure 	<ul style="list-style-type: none"> - Monitoring - Emergency plan - Flexibility - Prevention - New types of buildings - Building regulation - Decentralize (electricity-) networks - Create awareness - Research - International cooperation 		
	Insecurity	<ul style="list-style-type: none"> - Tourism - Economy (investors) 			
HEAVY RAINFALL	Flooding	<ul style="list-style-type: none"> - People in rural and urban area's - Buildings clearance (maintenance) - Infrastructure - Agriculture 	<ul style="list-style-type: none"> - Interception of rain (green roof, tanks ...) - New types of buildings - Maritime emergency - Prevention system - Green rivers / Depoldering 	<ul style="list-style-type: none"> - Aquifer recharge - Housing, tourism 	<ul style="list-style-type: none"> - People - Groundwater
	Erosion (landslide)	<ul style="list-style-type: none"> - Agriculture - People, Buildings 	<ul style="list-style-type: none"> - Plantation - Buffer lines - Waterline in slope - Slope reinforcement 	New biodiversity	Nature
	Destruction of crops	Agriculture	Monitoring systems		

EXAMPLE 1

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
SEA LEVEL RISE	Destruction of cultural heritage	Economy (tourism)	Protection with a dike or barrier	Multifunctional use of new dikes and barriers	Economy (tourism)

Example: Venice

Venice is regularly swamped by high tides and floods. With the sea-level rise this problem is getting more serious (= GENERAL PROBLEM). The flooding causes damage to the cultural heritage of Venice (= CONCRETE PROBLEM). This will make the city less attractive for tourists. The tourists are very important for the economy of Venice (= VICTIM). The solution that is found is to build a barrier in the lagoon of Venice to protect the city from the high tides (CONCRETE SOLUTION). It is a barrier of steel gates, which can be risen at times of high tides and chance for flooding because of storms. The city of Venice uses the elements of the barriers in the lagoon for different other functions like a theatre (= OPPORTUNITY). In this way, the barriers will protect the city and the cultural heritage, and will also give the city something extra. This will keep the tourists coming to the city, and may even attract new tourists which will make the economy flourish (= BENEFICIARY).

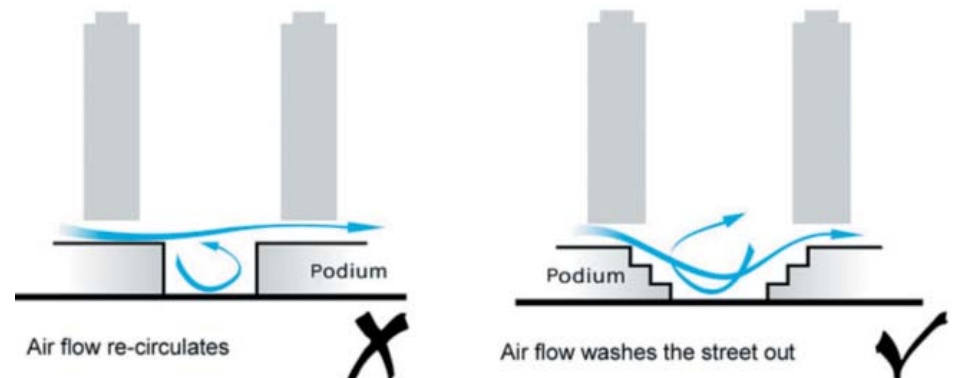


EXAMPLE 2

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
TEMPERATURE RISE	Air quality change (Ozone, CO ₂)	Inhabitants	Urban design approach to enhancing wind ventilation	Better air and living quality	Inhabitants

Example: Hong Kong

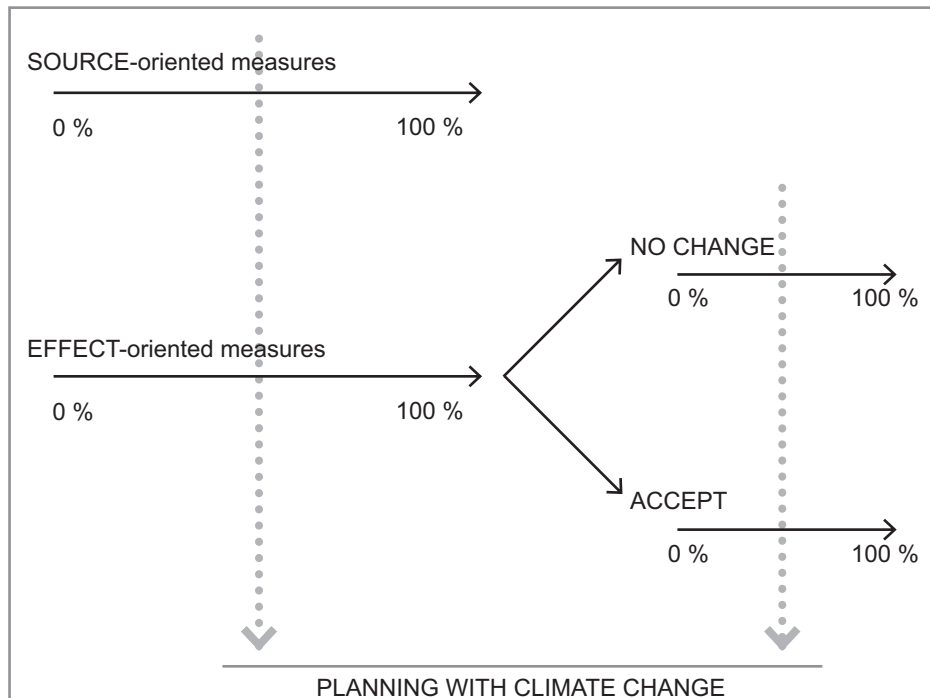
Global warming is one of the major topics of climate change. Rise in temperature and air pollution constitutes a vicious cycle whereby increased greenhouse gas emissions create a trapping of excess heat and leading to increased surface temperatures (= GENERAL PROBLEM). Air pollution (= CONCRETE PROBLEM) is a serious threat to urban inhabitants, especially of the densely urban areas (= VICTIM). Air pollution is a serious environment problem in Hong Kong. It is even exacerbated by the street canyon effect with the dense and high-rise buildings. Urban design for enhancing air-flow is needed to reduce the street canyon effect. For enhanced and long-term improvement of the wind environment in our city, it is important to optimize urban design for more wind penetration, especially to the public realm (= CONCRETE SOLUTION). The Hong Kong government has incorporated a chapter for 'Air Ventilation' in the Urban Design Guidelines of the Hong Kong Planning Standards and Guidelines, to promote better layout of building blocks in the city. Qualitative guidelines are provided which focus on pedestrian wind environment in the public realm at the macro-level. Through the better urban design promoted in the guideline, better ventilation can be achieved in the urban environment, which improve not only the air quality, but also the living environment (= OPPORTUNITY). By and large, the quality of life as well as people health could be improved (= BENEFICIARY).



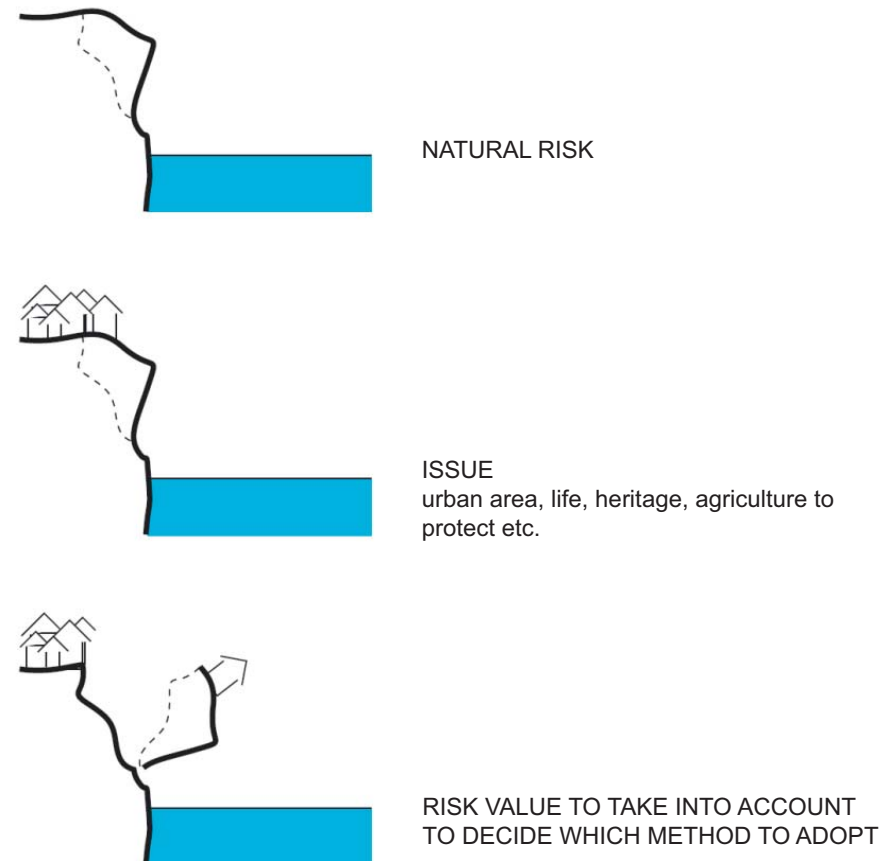
DIFFERENT APPROACHES FOR TAKING MEASURES

When planning with climate change, the measures can be seen as source-oriented measures and effect-oriented measures. Source-oriented measures try to tackle the causes of climate change, for example by posing emission standards or regulations. These measures are directed towards manipulating the polluting activities and reducing their impact on the environment. Effect-oriented measures focus on the effect of the climate change without tackling the cause.

The balance between the two will probably be somewhere in between. To use only source-oriented measures is not possible anymore because the effects of climate change can already be seen, and will have to be dealt with. But on the long term, source-oriented measures are necessary. When dealing with effect-oriented measures, you also have two options. The first is to accept no change to the area at all, and therefore protect it 100%. The other is to accept climate change, and let the area be changed by the effects of it. Again, the balance probably will be somewhere in between.



When dealing with the effect-oriented measures, calculating the risk value of the vulnerable area can be helpful to decide on the way the problems that climate change cause are dealt with. The risk value is determined by the estimated risk – what is the natural risk and what is its frequency? – (For example the occurrence of a possible flooding once in 10.000 years) in relation to the issue at hand – what is the element which needs to be protected and how important is it to protect it? – (For example the difference between protecting old building which are important historical heritage or which are just ordinary housing blocks).



TEN GOLDEN RULES

1 VICTIMS & OPPORTUNITIES

When planning with climate change one has to take into account that there are always victims (THREATS), but also beneficiaries (OPPORTUNITIES).

EXAMPLE 1

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
SEA LEVEL RISE	Saltification	Agriculture	Decrease of fresh groundwater	New types of agriculture	Agriculture

SEA LEVEL RISE will have an enormous impact on the groundwater in coastal areas, by rendering it brackish. Without any countermeasures (for example by increasing the amount of fresh groundwater coming from the rivers or from rainfall in the polder area) the salty groundwater flow will make the existing agricultural production in the in the coastal areas impossible. When the coastal areas are (occasionally) flooded, then the land is lost for agricultural use. On the other hand the new brackish environment can redirect agricultural production (in western Europe facing over production and cost-inefficiency) towards regional products based on the brackish environment (breeding sheep on brackish fields will give the lamb meat a distinct salty taste, or growing specific salty plants which are considered a delicacy). The flooded areas can be used for the cultivation of shellfish, mussels and oysters. By this way the loss in agriculture can offer opportunities for aquaculture and mariculture.



NEW SALTY AGRICULTURE



EXAMPLE 2

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
HEAVY RAINFALL	Flooding	Agriculture	Green rivers Depoldering	More space for recreation	Tourism

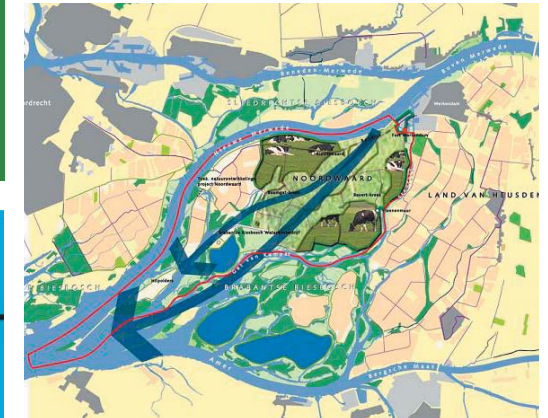
HEAVY RAINFALL can lead to too much water in the rivers, which can lead to flooding of areas along the rivers. This leads to loss of and damage to agricultural land. The victim of this problem is agriculture and the farmers in that area. A solution for flooding is to give more space to the rivers, so the water can get more space to flow. Examples to do this are green rivers or de-poldering. A green river is a bypass for the water of a river or between two rivers. This bypass is only used when there is a threat for flooding and can be an area for nature development and an area for recreation when there is no need to use it for water storage. De-poldering is a way to give areas back to the water that in the past have been taken from the water. The latter process is known as the creation of polder areas. This will give the water more space, and decreases the threat for flooding. This flooded polder can have a new function for recreation, for example for sailing and other types of water activities. Beneficiaries of this are the tourists and other people who use these areas for recreation.



GREEN RIVER



DE-POLDERING



BENEFICIARIES

2 PLAN WITH DYNAMICS

When planning with climate change one has to take into account the specific DYNAMICS of the climatological system.

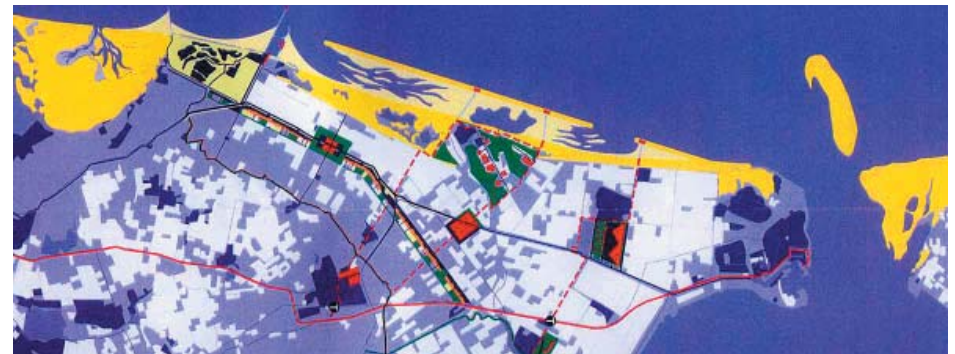
EXAMPLE

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
SEA LEVEL RISE	Flooding	The entire urbanised system	Superdike, sand supplementation, beach nourishment, reefs, islands, intertidal areas, ...	new landscapes to live in, work in, recreate in, for nature development, ...	The entire urbanised system

Solutions will have to be found for countering the SEA LEVEL RISE. The protection measures can range from maintaining the current situation, even at all costs, to accepting all changes that will occur. To put it differently, one can react to the sea level rise by heightening the dikes (or other hard defence works) so that the expected rise in water levels does not have any impact on the coastal area and there is no change. But one can also accept the change and make room for the rising water by letting large areas flood and simply move away (evacuation). In between those two extremes there is a wide variety of measures which deal with climate change taking in account the dynamics of this system. Instead of focusing on hard defence works, one can start building with nature by using the sand transportation of the sea, and the protective function of dunes (for example by beach nourishment, sand supplementation along the coast, the construction of reefs and islands breaking the force of the water,...). Another example is the creation of an intertidal area that is not sea, nor land (for example by de poldering the coastal area).



INTERTIDAL ZONES



3 INTERNATIONAL COOPERATION

When planning with climate change one has to take into account the INTERNATIONAL SCALE in which the changes and problems are situated

EXAMPLE 1

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
DROUGHT	Loss of fertile land	Agriculture	Building dams and water reservoirs → leads to problems with neighbouring countries!	International cooperation	The different neighbouring countries

Solutions for countering climate change cannot always be taken at a local or national level. Some problems exceed these levels, or in other cases the measures taken by one county can cause problems in another one. In south-eastern Anatolia in Turkey for example, DROUGHT problems have largely been solved by building barrages (Keban and Ataturk dams) on two major rivers (Tigris and Euphrates), so that more water can be provided for irrigation of the surrounding agricultural areas. On the other hand the barrages diminish the amount of water in the river itself, causing large problems like drought, landslides, land erosion, and the pollution of the river basins downstream in Syria and Iraq. In the future more conflicts will emerge between nations or regions over fresh water. The examples of these 'water wars' are numerous: between Mexico and the U.S., between the countries around Aral lake, between Pakistan and India, around Lake Victoria, ...

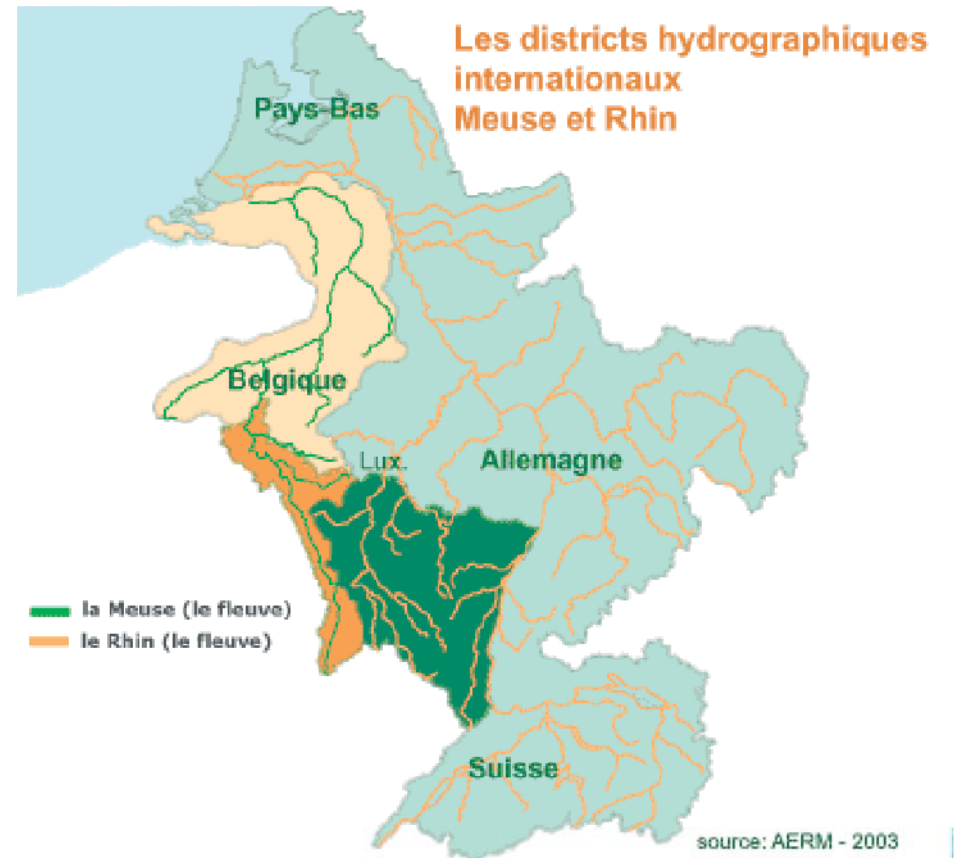
ATATURK DAM, TURKEY



EXAMPLE 2

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
HEAVY RAINFALL	Flooding	Agriculture	Green rivers Depoldering	More space for recreation	Tourism

A concrete example of international cooperation for reduce the impacts of HEAVY RAINFALL exists in Europe between The Nederland, Germany, France, Luxembourg and Belgium. These 5 countries have signed an international agreement for a global management of the management of flooding of the riverbassin of the river Meuse. The basin of Meuse extends in the 5 countries and her delta is situated in The Netherlands. So, when there was heavy rainfall in some places of the basin, some flooding was able to occur in The Netherlands due to bad retention of the water and a increased run-off of water more upstream the river Meuse. The objective of this international agreement is to come to a sustainable management of the river on an international scale. A commission was created and has three major objectives: to coordinate the obligations of the European directive; to give opinions and recommendations on the risks of flood in the basin of the river Meuse; and to give opinions and recommendations on accidental risks of pollution of the water.



4 RESEARCH & DESIGN

When planning with climate change there is a great need for additional RESEARCH AND DESIGN on the specific problems and solutions.

EXAMPLE

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
HEAVY RAINFALL	Flooding	Agriculture People	Research & Design	New types of housing	People Economy

Research and design can be used to find new types of solutions for the problems, which arise from climate change. An example to this is to find new types of housing, which can adapt to a change of water level due to HEAVY RAINFALL. Floating houses, houses on stiles, floating greenhouses, ... can be seen as new designerly solutions to the threat of flooding.



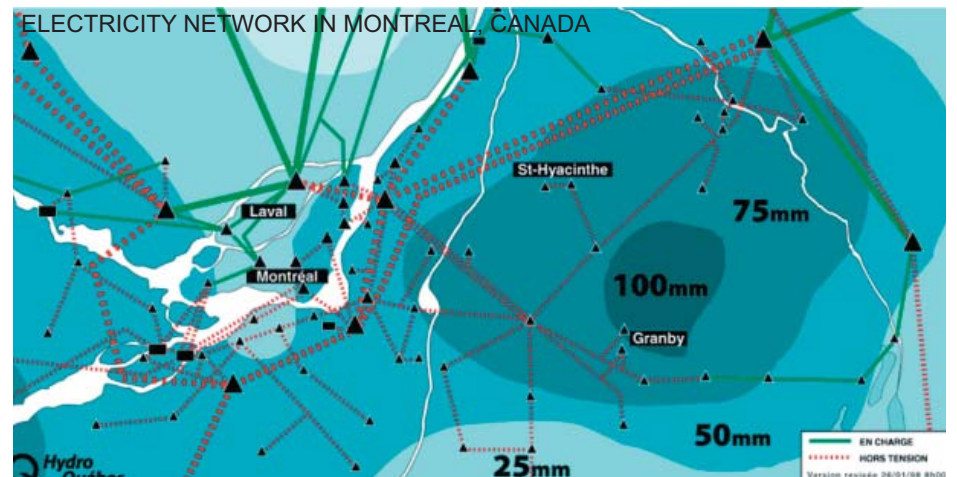
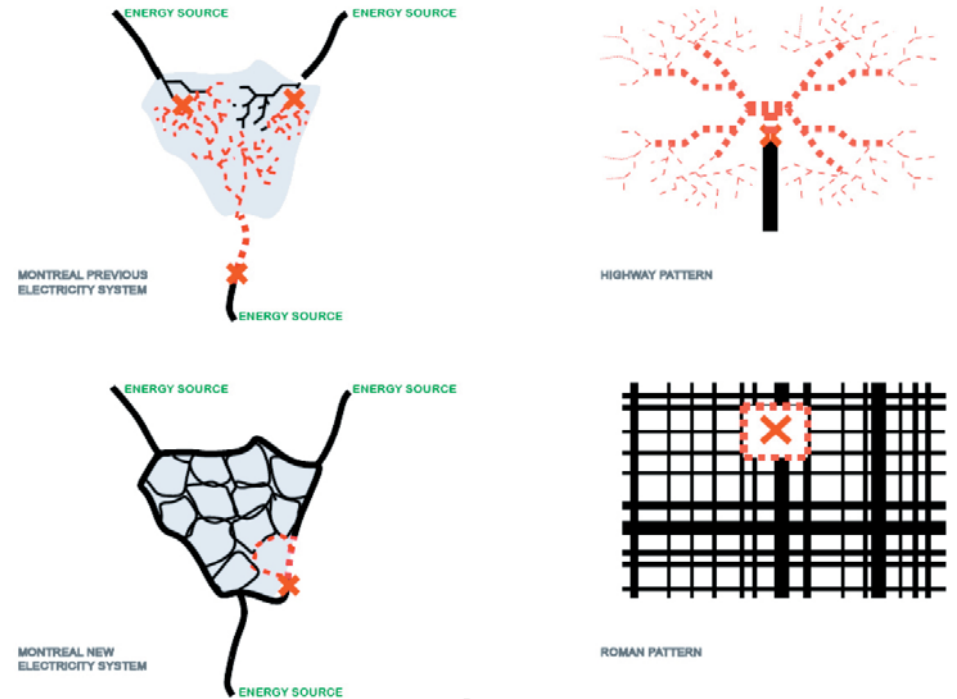
5 DECENTRALISATION & NETWORKS

When planning with climate change one has to redevelop existing structures into DECENTRALISED NETWORKS.

EXAMPLE

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
SEVERE WEATHER EVENT	Black-out	Urban system	Decentralised network	More resilient system	Urban system

Currently, in case of a SEVERE WEATHER EVENT, if one part or link of the energy, transport or water network is destroyed, the rest of the network is also affected and is put out of functioning although it is not damaged.. In 1998 in Montreal a Great Ice Storm caused severe breaks in the electrical network, leading to a dramatic situation where in some places electricity was only redistributed after a black-out during more than 5 weeks. As a consequence Hydro Quebec (the main electricity provider in Quebec) decided to design a new distribution system. The concept begins with a very few large cells or pods characters by a high level of self relevance. The structure then subdivides into a collection a smaller, less autonomous cells. There shall also be a multiplicity of sources implemented in specific place that would come to utilize a number of different sources of energy, some which can be obtained locally. Introducing a new network scheme where a multiplicity of access is provided to each part of the network can reduce the vulnerability of the entire network. The concept of the decentralised and integrated network entails enhancing the flows and connectedness of the region so that all pieces of the urban system are finely linked nodes in an integrated network. The nodal network would extend from a regional scale to that of the block and parcel. Short loops and networks should be self-managing and sharing capacity. In addition, storage, conversion, treatment or generation functions will move readily from one scale or location to another and surpluses will be easily shared from one node to another node.



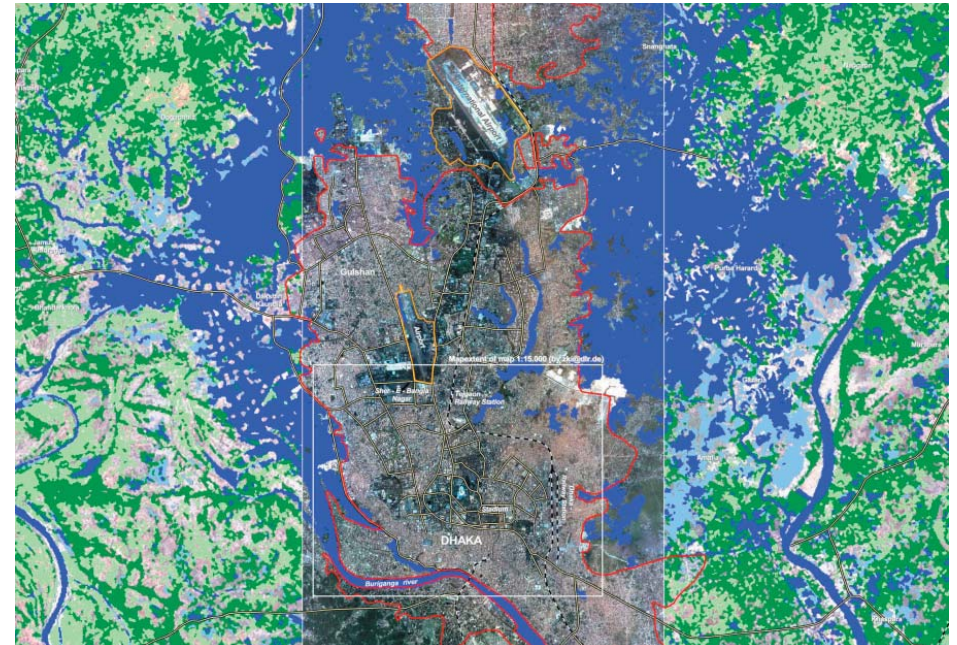
6 LEARNING FROM HISTORY AND OTHERS

When planning with climate change one has to LEARN FROM HISTORY and FROM OTHERS.

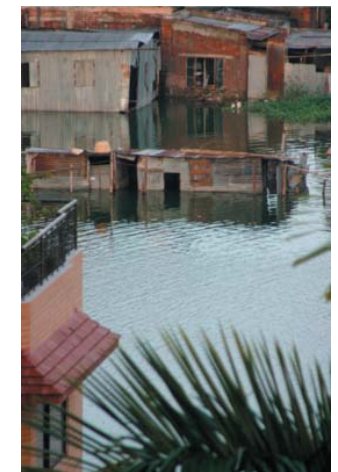
EXAMPLE 1

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
HEAVY RAINFALL	Flooding	Urban system	Reintroducing historic water system of ponds	Learn from history	Other urban systems

Facing climate change, we often think that problems we're facing are brand new. Finding new technical solution might take up a lot of time and money that some institution might not have at the local scale. In Bangladesh in the monsoon period HEAVY RAINFALL always occurred . In order to benefit from it as well as to protect them selves, local populations did often build ponds around which they would organize their settlement. Those ponds would then be used in the dry season as drinking water reservoirs and as "water traps" in the monsoon. This solution stopped being used in the 70's, while the huge increase of urbanization lead to the disappearance of those ponds. As a result damages due to heavy rainfall increased dramatically, leading to numerous death and heavy economical damage. The extreme violence and huge quantity of water that flooded the city were essentially due to the fact that climate change increased the heavy rainfall frequency, soil permeability fell dramatically due to the recent urbanization, water couldn't be trapped anymore on those strategic places. However even though the problem seems new at a local scale, solutions don't have to be innovative neither do they have to cost a lot. As a matter of fact, looking back to the past or to some similar places could help us to re-invent specific know-how and techniques able to fight against current problems. Recently the Bangladesh government looked back to the past and tried to learn from history. By doing so, he launched a new politic trying to create artificial lakes located in strategic points.



BANGLADESH



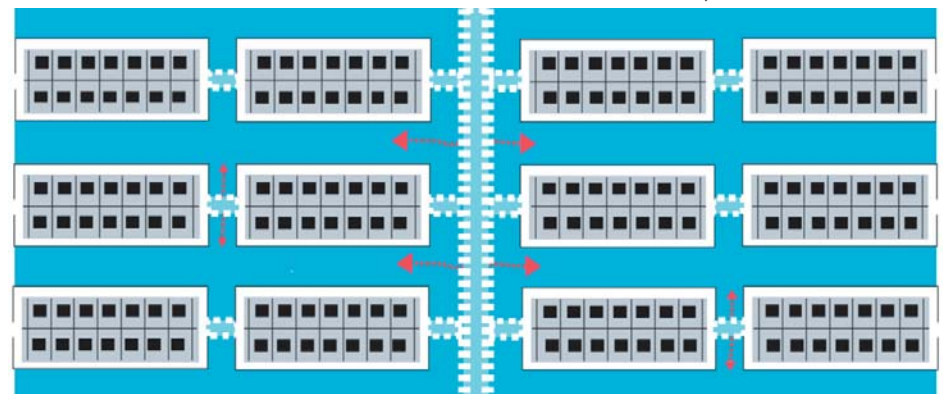
EXAMPLE 2

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
HEAVY RAINFALL	Flooding	Urban system	Water in urban plan	Learn from others	Other urban systems

In Florida, in the area of South Miami planners have a long tradition of urban design in wet land. Since decades residential areas are built according to a specific scheme allowing water to circulate freely into the urban pattern. Using the house on piles model, but at the urban scale, this scheme allows all essential networks to irrigate the area. This vernacular example of adaptation is currently could turn out to be a very useful one in the delta area context in Holland for instance, where new urban pattern have to be found in order to accept the excess of water due to HEAVY RAINFALL as a natural element of urbanization.



FLORIDA, RESIDENTIAL AREA



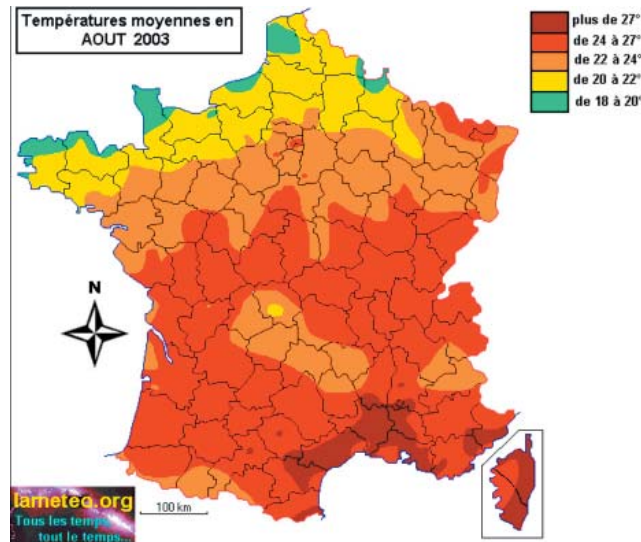
7 AWARENESS

When planning with climate change one has to raise the populations AWARENESS on climate change effects.

EXAMPLE 1

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
TEMPERATURE RISE	Extreme heat	People	Communication campaign	Create awareness	People

Recent experiments show that in terms of climate change, ignorance is often the main reason why ambitious policies are some time failing. Awareness of the population, the local authorities and the decision makers is then essential. In order to raise public awareness on climate change effects, some communication programs could turn out to be very effective measures. In France, in 2003 a great heat wave as a result of TEMPERATURE RISE lasted for half a month and led to the death of thousands of people, mainly old people, living alone on their flat without any family left. The death of these people being mainly linked with dehydration and lack of basic medical precautions, the government decided to impulse a vast communication campaign emphasizing on the need of creating solidarity networks around old, sick and lonely persons in order to prevent any other disaster.



COMMUNICATION CAMPAIGN IN FRANCE IN HOT SUMMER

EXAMPLE 2

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
TEMPERATURE RISE	Air quality change	Inhabitants	Taxation Incentives		

1. through levying taxation
 - taxation as a means to regulate carbon emissions into the atmosphere
 - higher tax for less environmentally friendly fuels
2. through giving incentives
 - to encourage adopting clearer energy, use less polluting modes of transport
 - to provide grants to help convert vehicle fleets to the cleanest technologies and fuels
3. through more informed purchasing choices so that the awareness of consumers are raised



8 MONITORING

When planning with climate change one has to **MONITOR** the changes in the climate and its effects.

EXAMPLE 1

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
TEMPERATURE RISE	Air quality change	People	Monitoring	Reduce impacts on climate change & raise public awareness	People

TEMPERATURE RISE is one of the major topics of global climate change, with which the situation is always worse in densely urban areas. Hong Kong, as one of the most densely populated city, is particularly suffering from urban heat and the subsequent air quality change. The city is located on the eastern side of the Pearl River Delta which has become one of mainland China's leading economic regions and one of the world's major manufacturing centres. The massive manufacturing centre has been attributed to the regional air pollution, while at local level power plants and vehicles are main pollutant emission sources in Hong Kong. It poses severe health threat to the inhabitants therein. In order to provide accurate air quality data for monitoring the air pollution problems, there are local and regional Air Pollution Indices (APIs) to measure the concentrations of ambient respirable suspended particulate (RSP) and other greenhouse gases over a 24-hour period based on the potential health effects of air pollutants, giving the air pollution level in an index format. The indices provides scientific base for monitoring the pollution problems and also helping evaluating the measures that have been taken for abating the problem. Moreover, with the raising public awareness to the negative impact of the air quality change, the local inhabitants are benefited.

At local level

Air Pollution Index (API) in Hong Kong

Level: 5 level – low, medium, high, very high and severe (Fig. 1)

There are 11 air quality monitoring general stations and 3 roadside stations scattered in different districts in Hong Kong.

Publicity: The index updates every hour, and is accessible to the general public through internet and also reported in mass media. (Fig. 2 & Fig. 3)



Forecast - Tonight and Tomorrow's Highest	General Station	15 to 40 / Low to Medium
	Roadside Station	40 to 55 / Medium to High

HONG KONG

Air Pollution Index at 17:00 13-Sep-2006			
General Station			Station Location Map
Station	API	Air Pollution Level	Contributing Pollutant
Central/Western	35	Medium	Nitrogen Dioxide
Eastern	28	Medium	Nitrogen Dioxide
Kwai Chung	28	Medium	Nitrogen Dioxide
Kwun Tong	20	Low	Nitrogen Dioxide
Sha Tin	22	Low	Nitrogen Dioxide
Sham Shui Po	28	Medium	Nitrogen Dioxide
Tai Po	33	Medium	Nitrogen Dioxide
Tap Mun	30	Medium	Ozone
Tsuen Wan	29	Medium	Nitrogen Dioxide
Tung Chung	18	Low	Respirable Suspended Particulates
Yuen Long	27	Medium	Nitrogen Dioxide
Roadside Station			Station Location Map
Station	API	Air Pollution Level	Contributing Pollutant
Causeway Bay	47	Medium	Nitrogen Dioxide
Central	48	Medium	Nitrogen Dioxide
Mong Kok	51	High	Nitrogen Dioxide

Remark:

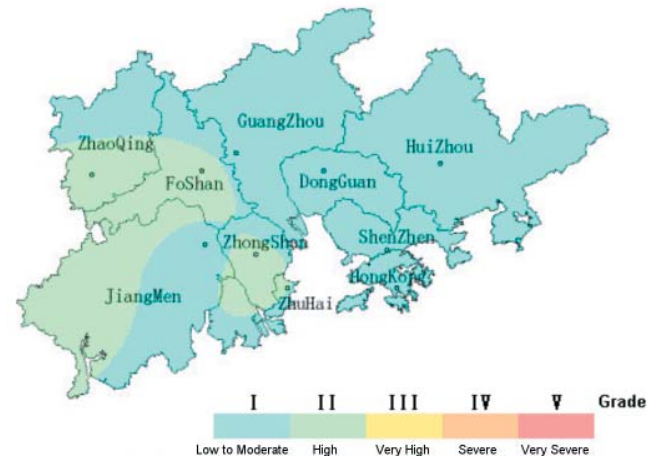
The API information is based on raw data taken directly from EPD's Air Quality Monitoring Network.



At Regional Level

Regional Air Quality Index (RAQI) for Hong Kong and the Pearl River Delta
 Project: The Pearl River Delta (PRD) Regional Air Quality Monitoring Network - As a joint effort for the regional air quality objectives between Hong Kong and Guangdong Province of China
 Since: November, 2005
 Level: 5 level - The higher the index value, the higher the regional air pollution levels
 There are 16 air quality monitoring stations in the PRD region (13 in China and 3 in Hong Kong). (Fig. 4)
 Publicity: Published in form of daily air quality report on the Internet accessible to the general public

PEARL RIVER DELTA



EXAMPLE 2

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
TEMPERATURE RISE	Air quality change	People	Monitoring	Influence traffic system	People

Brussels also has developed a network of samplers overall in the city. The system samplers records permanently the concentration of the following pollutants: SO₂, NO, NO₂, O₃, CO, CO₂, suspension particles, Hg and BTX. Each recording are analyzed and compiled with others into data based for create 2 air quality indicators: a global indicator and a traffic one. These indicators are dynamics and they are changed each hour. These indicators are presented in a scale with 10 values from excellent to very bad. The global indicator gives the air quality in the entire city and the traffic indicator shows the influence of the traffic on the on the air quality.

So, if this indicator is too bad, direct measures can be taken by the authorities to reduce the emissions from the traffic. For example, the entire roadway network is equipped of dynamics panels witch can used to give messages at the car users for control and limit the speed.

The screenshot shows the 'Le Pollumètre' website interface. The main heading is 'BRUXELLES ENVIRONNEMENT - IBGE INSTITUT BRUXELLOIS POUR LA GESTION DE L'ENVIRONNEMENT'. Below the navigation menu, there is a section titled 'Le Pollumètre' with the text: 'La qualité de l'air est-elle bonne en ce moment ? Et à proximité du trafic routier ? Avec le Pollumètre, chacun peut avoir, en 1 qualité de l'air extérieur en Région bruxelloise.' A sub-section 'Qu'est-ce que le Pollumètre ?' explains that the system uses a network of measurement stations to record pollutant concentrations and calculate dynamic indices from 1 to 10. A table shows the index scale:

Le Pollumètre	
Qualité de l'air le 13/09/2006	
Indices	
Exécration	
Très mauvaise	
Mauvaise	
Très médiocre	
Médiocre	
Moyenne	trafic
Global, assez bonne	
Bonne	
Très bonne	
Excellente	

Historique sur 7 jours disponible plus bas.

Ces indices sont présentés sous la forme d'une échelle allant de 1 à 10. Un indice global de valeur 1 signifie que la qualité de l'air est « excellente » qu'un indice global de valeur 10 signifie qu'elle est « exécration ». A partir d'un indice 7, nous approchons des seuils limites de pollution.

Infos pratiques: [L'indice global](#)

BRUSSELS, BELGIUM

9 MANAGEMENT

When planning with climate change one has to **MANAGE** the risks, problems and solutions involved in the climate change to minimize the effects of it.

EXAMPLE

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
DROUGHT	Lack of water	Agriculture People	Rationalisation of water Reutilization of grey water	Better quality of water Better management of water	Agriculture People

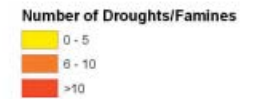
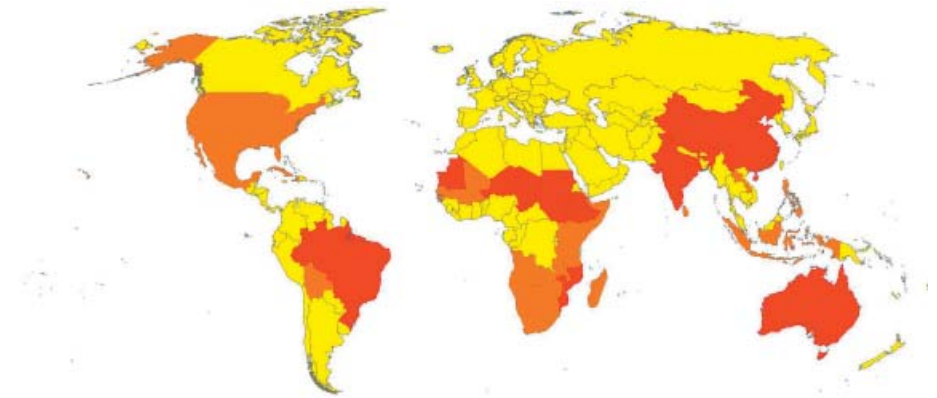
A DROUGHT usually refers to an extended period of below-normal rainfall. The effects of drought vary greatly, depending on agricultural, urban and environmental water needs. It's a opportunity to create real management plans also for the water distribution and for a management plan for the land use , especially in susceptible dry lands. Periods of drought can have significant environmental, economic and social consequences. The effects of droughts have to be analysed and assessed on regional or local scale. Meanwhile failing groundwater recharge in a certain period does not necessarily have long lasting ecological effects, an accumulation of many events over several years can affect the entire ecological system. It is also important to take the dependency of, e.g. a groundwater system on annual recharges into account. Regions with very shallow aquifers require a steady recharge meanwhile deeper and larger aquifers can cope easier with drier years, simply because they store much more water. In Europe the man made impact on droughts is considerable.

There are several examples of water resource mismanagement, such as over pumping of aquifers, sealing of areas increasing surface runoff and restricting groundwater recharge, overuse of water in dry areas and intensive agriculture, and many more. Since climate conditions that lead to droughts are extremely difficult to predict and they are usually not recognizable until it they are already well advanced, the drought hazard can only be managed by the sustainable use of water resources. Water should be stored in times when it is abundantly available in order to ensure enough supply during a drought. Portugal is among the worst hit of European countries suffering from drought. Portugal will probably face an especially hot dry summers, facing the worst draughts since 1990, having in regard that these aspects have a strong negative influence on productivity and on the national economy (mainly on agriculture, but also on

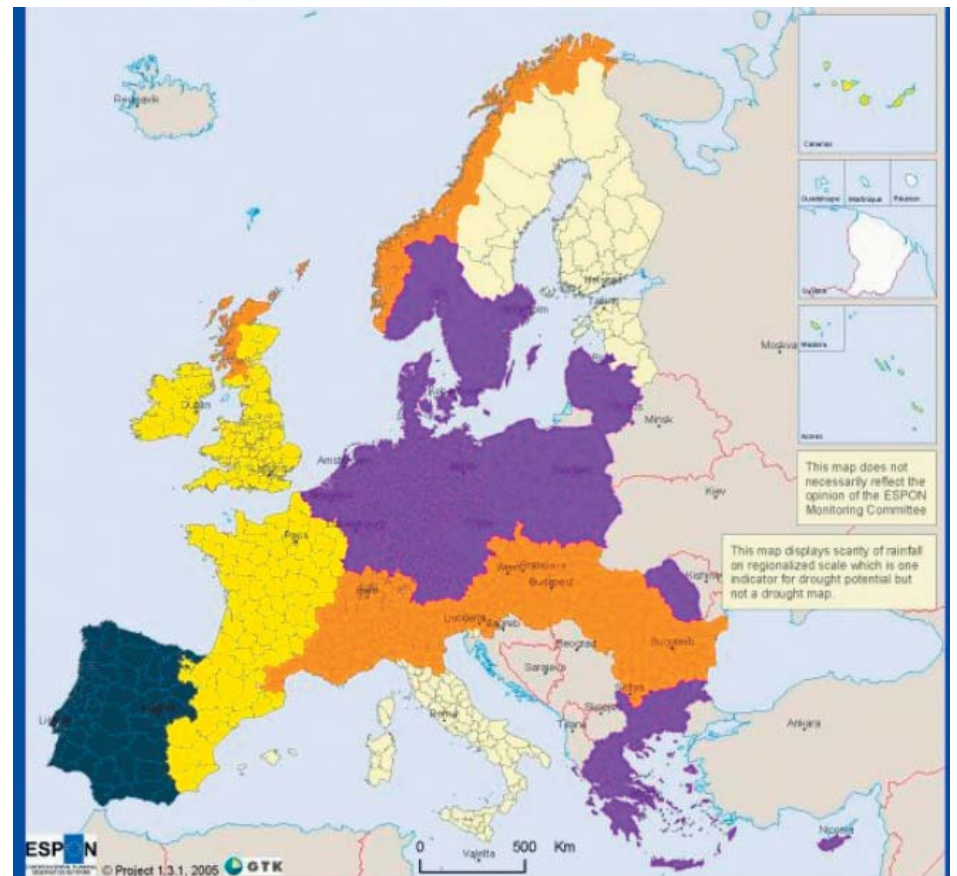


tourism), on environmental stress and forest degradation (increased probability of fires), and on health and life quality (decreased water quality and lack of drinking water), Considering that this winter several small villages are facing a lack of drinking water as is usually only felt during dry summers and are already being supplied by tank trucks. Considering that in general the water quality of rivers and dams is decreasing, further hampering water supply. Solutions can be provided, according to a water management plan:

- to implement the additional measures of the National Plan for Climate Change (such as: implement a Carbon tax applicable to industry, energy supply, households and services; promote the retention of Carbon in agricultural soil; promote adequate disposal of livestock waste
- to ensure that the national water supply policy adequately deals with the draught problem by striving for a reduction in losses of the water distribution grid and a more efficient consumption.
- to change the forest policy by effectively reducing the size of continuous areas of eucalyptus and pine tree, developing incentives for the planting of multifunction traditional forest based on oak and cork tree, which are more resistant to fires and more efficient in refilling ground water reserves;
- to control the level of the Portuguese most intensive water-use economic activities, like agriculture, by promoting the cultivation of less water-demanding species, and tourism, by not permitting new golf courses in potentially draught affected areas, and ensure that the watering system of the existing ones is supplied with recycled water.
- to invert the tendency for privatizing water services, guaranteeing that public water systems have public management.



EM-DAT: The OFDA/CRED International Disaster Database
www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium



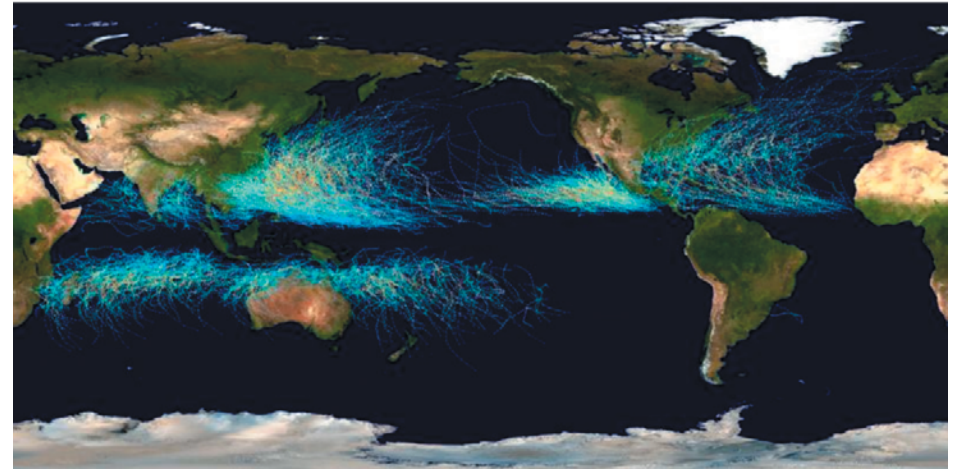
10 EMERGENCY PLAN

When planning with climate change one has to have an **EMERGENCY PLAN** for when the measures at hand prove not to be sufficient.

EXAMPLE

General problem	Concrete problem	Victim	Concrete solution	Opportunity	Beneficiaries
Severe Weather Events	Heavy damage construction Insecurity	Buildings Infra-structure People	Emergency Plans	Research Awareness International Cooperation	Humanity

Disaster preparedness at the local level should focus on teaching people how to act in a disaster and how to develop emergency plans. The emergency plans can take an important role to minimize the impacts a SEVERE WEATHER EVENT. The tsunami, resulting from an undersea earthquake close to Sumatra on 26 December 2004, killed around 250 000 people and affected millions in Bangladesh, India, Indonesia, Kenya, Madagascar, Malaysia, Maldives, Myanmar, Seychelles, Somalia, South Africa, Sri Lanka Tanzania and Thailand. Tsunami early warning systems must be set up as a first step to better preparedness. But if we are to reach the most vulnerable, we must also start with community-based projects. How well people react in an emergency depends largely on how successfully such plans are communicated to them. Proper planning can dramatically reduce loss of life and property. The medium- and longer-term needs of the most vulnerable in disaster-prone areas are addressed by improving the ability of communities at risk to cope with future disasters, strengthening and where possible replicating early warning systems that were successfully activated in some countries. At the same time, the capacities and capabilities of national societies will be strengthened to support community based disaster preparedness and risk reduction programmes while preparing for and responding to disasters in a timely, efficient, and coordinated manner linked to regional and international response mechanisms.



December 26, 2004



CONCLUSIONS & RECOMMENDATIONS

CONCLUSIONS

The Ten Golden Rules are related to different levels or scales depending on the measures which have to be taken: international level (international cooperation), national level (decentralization & networks), regional level (plan with dynamics), local level (emergency plan). Most of them however can be applied on more than one level of scale.

The Ten Golden Rules are not only about spatial planning, but also about other subjects: social, management, research...etc.

The Ten Golden Rules are general answers which are derived from the five general climate change problem analysed in the matrix, but they can easily be applied in different climatological situations. They can even be applied to other large scale social problems (like famine, migration, social unrest, war, ...). This is a new way of thinking.

The Ten Golden Rules do not only apply to delta or coastal regions, but also to other areas which have to deal with climate change. (like drought in desert areas, the melting of glaciers in mountain ranges, ...).

The Ten Golden Rules can be applied in one specific location. When we do that, we will probably not use them all, or in this order, this will differ per location and per level of scale.

The Ten Golden Rules are sustainable when the national government makes sure they are all applied on their different levels of scale. The sum of them guarantees the efficiency of the national policy on climate change.

RECOMMENDATIONS

The sum of the Ten Golden Rules makes a national strategy sustainable. The national government has to make sure that the Golden Rules are together implemented in the communication and planning strategy.

When implementing the Ten Golden Rules in the national communication and planning strategy, it is important to make an agreement about the money: who will pay for what?

For VROM, it will be interesting to apply the Ten Golden Rules on the Randstad, to show the effects of the strategy on a location.

ANNEXES

ANNEXES

I - LIST OF PARTICIPANTS

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II - LIST OF PREPATORY PAPERS

Young Planning Professionals

Peter Vanden Abeele
Belgium: coast and delta

Rui Duarte
Climate vulnerability and the potential effects of
climage changes in Portugal

Jean-Philippe Lens
Effects of climate changes in Belgium. A general
summary about Belgium

Penny Pang Wai Ki
Hong Kong in the context of the Pearl River Delta,
China

Magali Volkwein
A general summary about France

Elien Wierenga
The Netherlands

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Mehmet Doruk Özügül
A general summary about Turkey

Neaz Rahman Khondker
Bengal delta and coastal area: its environment
and planning

Meinte de Hoogh
Climate change in the Netherlands

III - CD

Contents of the CD

1. Homework Young Planning Professionals: papers and presentations
2. Presentation coordinators VROM
3. Presentation coordinators ISoCaRP
4. Final Report

COLOPHON

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Internationale Gesellschaft der Stadt – und Regionalplaner
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VROM Young Planning Professionals' Workshop – Climate change in delta regions.
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