SOUTH EAST EUROPE
Transnational Cooperation Programme

CLIMATE CHANGE
AND IMPACTS ON
WATER SUPPLY

CC-WaterS

THEMATIC WORKSHOP TW6.3
27. -28.06.2011, Wildalpen, AT
MINUTES

Jointly for our common future

Table of Contents

1 Welcome

Welcome and introduction is given by Marina Mader, the agenda of TW 6.3 and organizational issues are presented.

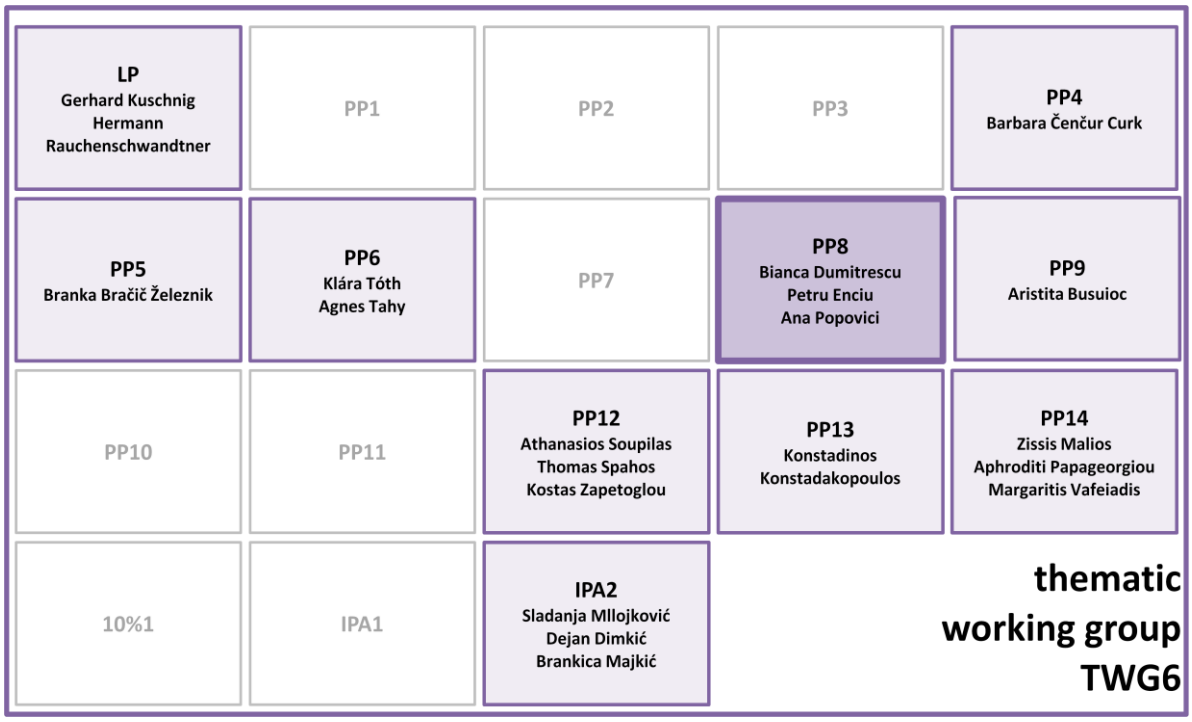
Remarks

Bogardi suggests to focus in the morning on the first two topics, on economic consequences will be presented in the afternoon anyway.

2 Project Management

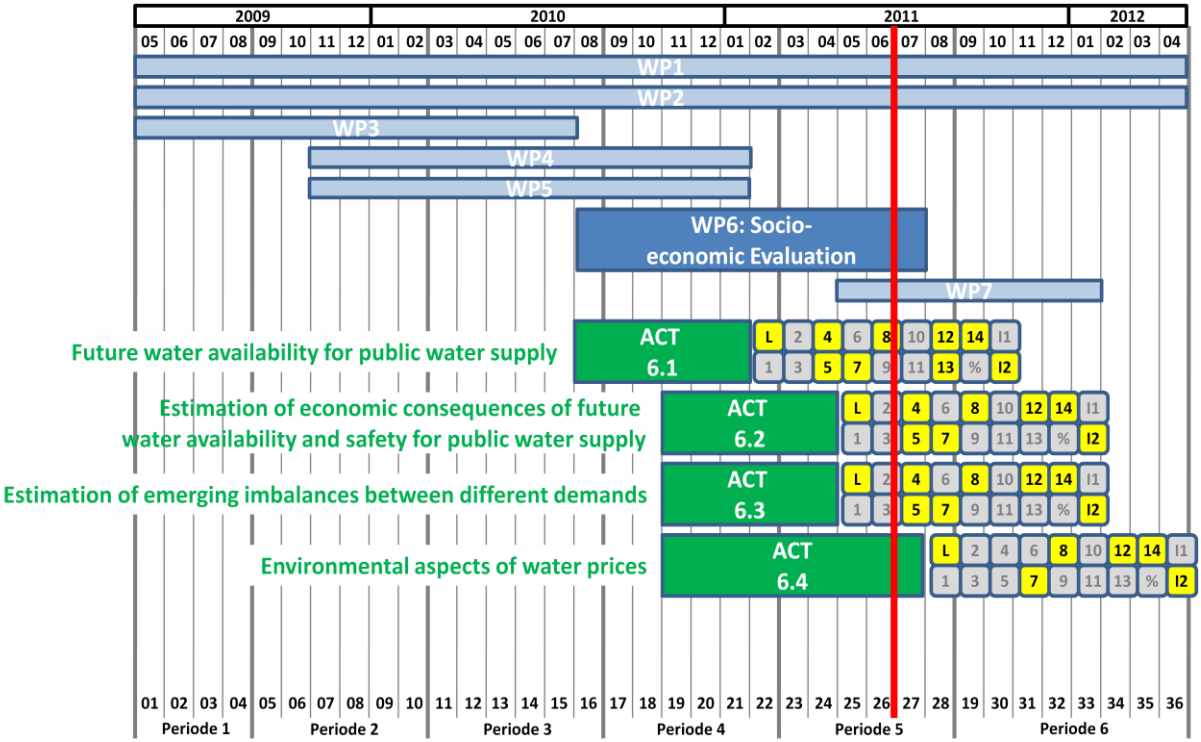
Marina Mader presents the WP 6 issues.

2.1 WP6 representatives



2.2 WP6 timeline

The timeline and the activities are presented.



2.3 WP6 Outputs

Missing contributions of WP 6 outputs are presented. First 3 activities are in delay, other reports have to be finished until end of July and end of August.

quant.	output	period	Date of submission to WP Leader
3	Jointly agreed scenarios of water uptake for different water utilizers (industry, agriculture, tourism, households)	period 4	31.03.2011
1	Joint report about future water availability for public water supply	period 4	17.06.2011
1	Joint report about joint strategy for estimation of economic consequences of future water availability and safety changes	period 5	02.05.2011
1	Joint report about economic consequences of future water availability and safety for public water supply	period 5	31.07.2011
1	General methodology report about determination of imbalances based on different water demands	period 5	31.08.2011

1	Joint report about estimation of emerging imbalances between different demands	period 5	31.08.2011
1	Consolidated ACT6.4 report about relation among ecosystem services, water treatment and costs	period 5	31.08.2011

2.4 Changes in meetings

The new meeting schedule is presented.

Date	Meeting Code	Location
14.-17.11.2011	SC5/SB3/+TW72	Vienna, AT
23.-26.01.2012	PW3/+ TW73	Thessaloniki, GR
16.04.2012	SC6	Waidhofen, AT

2.5 Project news – 4th call

- 4th and last call of SEE opens in Oct. 2011, lasts until Nov. 2011
- Project duration max. 24 months
- LP wants to do a follow-up project, topic for the next day
- Priority axis: 2.1 Improve integrated water management and flood risk prevention

3 Status in WP 6

Presentation is given by Bianca Mitrica. The deadlines for the reports are presented.

Act. 6.1. FUTURE WATER AVAILABLE FOR PUBLIC WATER-SUPPLY

- 1.2 only to consider for partners to which relevant

Act. 6.2. ESTIMATION OF ECONOMIC CONSEQUENCES OF FUTURE WATER AVAILABILITY AND WATER SAFETY FOR PUBLIC WATER SUPPLY

- To use either the established table, mathematical or conceptual model

Act. 6.3. ESTIMATION OF EMERGING IMBALANCES BETWEEN DIFFERENT WATER DEMANDS

- Deadlines for the report and the general methodology: 31. August 2011

Act. 6.4. ENVIRONMENTAL ASPECTS OF WATER PRICES (COSTS)

- Deadline is 31. August 2011
- 2 case studies concerning Vienna and Ljubljana fields

Missing contributions:

output	LP	PP4	PP5	PP6	PP8	PP12	PP13	PP14	IPA2
Jointly agreed scenarios of water uptake for different water utilizers (industry, agriculture, tourism, households) **March 31, 2011**	√	NO	NO	part ially	√	√		√	√
Joint report about future water availability for public water supply, **June 17, 2011**									
Joint report about joint strategy for estimation of economic consequences of future water availability and safety changes, **May 1, 2011**	NO	NO	NO	NO	√	NO		NO	√
Joint report about economic consequences of future water availability and safety for public water supply, **July 31, 2011**									
General methodology report about determination of imbalances based on different water demands, **August 31, 2011**									
Joint report about estimation of emerging imbalances between different demands, **August 31, 2011**									
Consolidated ACT6.4 report about relation among ecosystem services, water treatment and costs, **August 31, 2011**									

3.1 Current state of the art – partner presentations

3.1.1 IPA partner 2

Presentation is given by Miomir Vasiljevic.

- Socio-economic evaluation: All 3 test areas recorded economic growth through the year 1989
- Characteristics for all 3 areas: Industrial growth, population growth, employment rate growth till 1989, then followed by decrease in the 90ies
- Assumption for future water supply in Serbia:
  - Economic pricing of water services in Serbia will be established by year 2015 (2020). Based on the experiences from other transition countries, an increase in water prices (and technical water supplying system development) in the first period will result in certain decrease in water demand of the consumers (estimated 10-20%), compared to present water demand.
  - Concerning water demands in agriculture, it is assumed that there will be a constant increase of irrigated areas and extreme (high or low) water requirements will be determined by extreme climate conditions
- Methodology:
  - Methodology for estimation was based on already established socio-economic story lines, namely ForeSight, adapted to the test areas.
  - Story lines were used because of rapid social and economic change in Serbia.

Remarks

Nachtnebel: Concerning ecological water requirements, which q min is taken for the future?

Vasiljevic: According to law they have to release 5 % minimum. The problem is in dry years, as smaller rivers will fall dry. This issue – the calculation - will be presented in the afternoon.

3.1.2 PP12 – PP14

Presentation is given by Kostas Zambetoglou.

- In Aravissos test area, no dramatic changes in population, land use or local water consumption expected
- Most important factor are precipitation levels
- Future expectation: decrease of water consumption in the households, spatial expansion increasing, losses decreasing
- Concerning minimum demand - influences by:
  - Watering of gardens in suburban area and water for pools will increase
  - Climate change will extend the high consumption period rather than the consumption per capita
  - Attitude to water (water saving and environmental consciousness together) could eliminate overconsumption
  - Water prices influence overconsumption, but not drastically

3.1.3 PP8

Presentation is given by Bianca Mitrica. The parameters and the approach for the socioeconomic evaluation are presented.

- The differences in the storylines for Timis plain and Leu Rotunda Plain are presented.
- Population Drinking water demand scenarios: quantity will increase in both areas.
- Timis Plain:

- Industry water demand: will increase
- Services water demand: will increase

- In Leu Rotunda: industry and services water demand cannot be diversified in this area, will increase due to increase in network.
- Agriculture demands: will increase, due to less precipitation and higher temperature (climate change conditions)
- Ecosystems: not relevant
- Concerning future water availability for public water supply:
  - In both areas, the water demand will increase, due to the poor water quality form the phreatic aquifer

Remarks

Bogardi: Good work has been done by PP08; it is a good mixture of conceptual and the regression based forecast.

3.1.4 PP06

Presentation is given by Klara Toth.

Nyirseg area:

- Household water demand will increase
- Non household water demand will also increase in the future
- Internal use and losses: will increase only slightly
- Agriculture: bad quality for reported data, experts meaning is much higher than calculation
- Ecosystems: being processed currently
- Future water availability:
  - in all scenarios and for all branches, there are negative figures

Bükk area:

- Household water demand will increase
- Non household water demand will also increase in the future
- Ecosystems: being processed currently

Remarks

Nachtnebel: Agriculture and industry; are they competing at the source, but they have their own water supply?

Tahy: No, only partly, in both areas e.g. 20% public water is used for the industry,

Toth: Industry pays higher price, but can recover VAT and therefore the price is higher, but indirectly the same price as for public.

Cencur-Curk: How were the scenarios for industrial water demand determined?

Toth: Plus 15% and minus 10% for the other were taken.

3.1.5 PP04

Presentation is given by Barbar Cencur-Curk.

Methodology will be done similar to HU partners. In SL public water supply also services industry.

- Water use in Ljubljana field: is decreasing in the area
- Population: plausible is slight decrease in population growth
- GDP: it is estimated to increase in the future, doesn´t mean that consumption will rise too
- In Mura valley, all consumption is decreasing, except for households and water losses, but differs from settlement to settlement
- Water use in Mura valley: is decreasing, in Lendava increasing and in Ljutomer it is stagnating.
- Same counts for population trends
- Sociological aspects have been looked at: public awareness of climate change and water issues, public information and media, also EUROBAROMETER has been regarded, also other results from other surveys are presented (ISSP, RSM)

Remarks

Kuschnig: It is very interesting to have this kind of sociological data; maybe it should also be included it in the documentary (Eurobarometer).

Cencur-Curk: It was also very interesting for Slovenian partners, because Slovenia is very extreme in public opinion concerning the issues.

Vasiljevic:P water supply decrease since 1987, what is the reason?

Cencur-Curk: Industry was shutting down; people bought better technology equipment, the decrease is partly from all of these factors.

3.1.6 LP

The new colleague for WP 6 for the LP is presented: Martin Pachel from the University of Economics and B.A., Vienna.

LP presentation is given by Gerhard Kuschnig. The test areas of Hochschwab and Rax are presented.

- Demand = demand in the catchment area and demand in Vienna and Graz
- Demand in the catchment area = households, industry, services, agriculture and ecological demand
- Storyline and scenarios were done by the LP for this WP
- No correlation between population and economic growth and water demand
- Possible causes
  - Rehabilitation of network and leackages
  - Rehabilitation of pipes in buildings
  - Technical improvements of water taps
  - Minimising amount of toilette water
  - Cost covering prices for drinking water and waste water (price of waste water is calculated based on the drinking water demand)
- Water availibility – discharge:
  - In test area actual: app. 40m³/s there from app. 10 – 15% are used
  - 2021 – 2050: no change
  - 2071 – 2100: +3.5% - -7%
  - Consequences have to be calculated by fuzzy software
  - Eventual missing amounts have to be delivered by already existing groundwater wells

Remarks

Toth: It might be surprising that the forecast from 2050 and 2100 are appr. the same level as now, in HU it is 30% growth, but per capita water consumption is 130 litres per day, in HU test areas it is about 85 litres per capita per day. At the end HU has the same consumption as AT, this seems realistic.

Kuschnig: This is an expert guess; the most plausible per capita water demand was calculated with 120 l per day. The most important factor will be population dynamics and the challenge for water suppliers. Climate change is not so important.

Nachtnebel: Due to higher temperature there will be more evapotranspiration, precipitations is supposed to increase by the end of the century. We will try to analyze the difference in water consumption in relation to temperature.

Tahy: In HU there is a difference between Nyirseg and Bükk, the rise in Miskolc is lower than in Nyirseg areas, because temperature rise differs, too.

Cencur-Curk: What is the percentage of the minimum discharge in the past?

Kuschnig: In 2010 it was 500.000 m3 per day, the waterworks cannot support this with the catchment, but there are reservoirs for this. Not every day in the year can be taken (contamination), it is tried to take more days where water can be taken. There were not so many problems with decreasing discharge.

Cencur-Curk: There will be no problems with water scarcity and dry periods?

Nachtnebel: There was even longer dry periods simulated and not any problems seen resp. there were no findings.

4 WP6 Socio-Economic Evaluation

4.1 Introduction and methodology (conceptual approach)

Presentation is given by Istvan Bogardi.

- The test area is bordered by the extent of the hydrological unit; water quality and water sources to be considered.
- One or more public water suppliers are to be considered (irrigation companies, etc)
- Management actions are realized by the waterworks covering the whole test area
- Regional /local government is entitled to set into force management actions
- Definition of the structure of ranking criteria: for drinking water only the present percentage allocation can be used, if there is only one water supply
- Interpretation of risk assessment (WP6) and risk management (WP7):
  - Estimated elements for risk analysis: available water resources and water quality characteristics; also water demand; other elements refer to present situation (elements see ppt presentation)
- Conclusions of discussion on ranking criteria for the risk assessment: water contamination risk; base risk of WP 6 included in the Fuzzy Composite Index in WP 7.

Remarks

Nachtnebel: What do leg time and flexibility mean?

Bogardi: Leg time means until when actions becomes effective. Flexibility: this means to consider ad hoc common criteria for evaluating the criteria. It may be not needed to be unique in the criteria. Different test areas will have different criteria.

Nachtnebel: Is it wanted to include different other users and the impact on them, because the main issue is the water supply. Is it necessary to think about the consequences for e.g. industrial shortage?

Bogardi: The management could include the available water supply which is more than the one only by the waterworks, as presented in the beginning (present allocation of the available water reosurces).

Kuschnig: It should be taken into account if the same resources or aquifers are used. There should be also some sociological features, WFD related (e.g. economic factors).

Tahy: In HU, there is another source for industrial users in Bükk, different than in Nyirseg. The Hungarian problem is, if water works has policy not to provide water to the industry, and governmental authority has the same policy as the waterworks - how can the same management actions happen at the same level? This will change licensing, e.g. industries get licenses because of higher priority; this is happening at the moment in HU.

Nachtnebel: Is there a problem of competition at the source at the moment or in the future, there is no case known where drinking water was sacrificed to industry water use; industrial water use and efficient use is not the task of the project.

Tahy: In HU, it is a licensing problem; ecosystems can only be protected by licensing.

NN: Is it possible by the project to achieve statements that the water suppliers have to face risks in water quality and water quantity in the future?

Bogardi: It is too much even, the actual situation can be defined, and it is not possible for the future.

Nachtnebel: There are projections available for scenarios, at least some conclusions and statements can be drawn, very risky or not risky at all; e.g. what is likely to going to happen. A decision which might be due in 50 years cannot be anticipated.

Bogardi: Especially, in WP 7 general statements can be made, but it is needed to give more risk possibilities to rank and be more precise.

Kuschnig: In the AF it is not so clearly elaborated the difference between WP 6 and WP7. In WP7 the project can propose some management options, so it is good to make a distinction between WP 6 and WP 7.

4.2 Applied methodology and results – partner presentations

4.2.1 IPA partner 2

Presentation is given by Miomir Vasiljevic.

- Estimation of water availability: no calculation of amounts, but to display the critical periods in a dry year and an average year
- Either calculate average year in the 30 year period, or most critical year in the 30 year period, which is more critical to the waterworks?

Remarks

Cencur-Curk: This was the discussion of the last month, as Zoltan Simonffy presented to calculate the average. For SL, the critical values are most important; the minimum values will be used in the models, because they are important.

Kuschnig: Do the models tell anything about the variability; does it change in the future? This should be managed by the water works.

Cencur-Curk: No, only the difference in the climate change models. The variability in the 2nd period is much higher.

Cencur-Curk: The second answer for the Serbian colleagues is suggested.

Nachtnebel: Changes can be described in mean and in variability by normal distributed values. Only taking the minima is suggested, because simulation cannot be trusted for 2050 and onwards.

Bogardi: In Bükk area, this is the key question because of the karstic area. E.g. the August water flow with the water demand for August is compared. You can consider the time series, if available, then a 95% prediction is possible.

Tahy: For Bükk area, a 4-year period out of the 150-year times series was selected and looked at it if was average or exceptional period.

Cencur-Curk: For the minimum and maximum values you don't have the probability, just the e.g. 30 years averages.

- **Conclusion: It is agreed to make a statistical analysis on the selected time series.**

5.3.2. PP 12 - PP 14

Presentation is given by Marios Vafeiadis.

- For Aravissos test area no problem with water availability, for irrigation there is a big spoil in water, so with bettering the network the production can be even increased
- Water consumption needs: lower limits (better technology); population growth only by immigration, spatial expansion increasing, life level increasing (suburbanisation, gardens, pools, etc), losses unknown
- Water use: mainly households (>70%); state and local authorities, industry and oil refinery, other production sector
- Water distribution (infrastructure/management):
  - Pipelines are old, will be renovated in the future?
  - Administrative situation will be reorganized in the future
  - Pricing policy: now politically dependent, in future gain dependent
  - Privatization: was proclaimed last month by the government, want to sell 40%
- Price of water and waste water increased in the last period
- Agricultural and ecological aspects are not relevant for GR test areas
- Conceptual model was chosen
- Models were not used (e.g. climate variability), as results from different measuring stations around were not coherent
- It is not known how the GW aquifer (karst) behaves or how the limits are defined
- Data on rainfall, the level of wells and outflow (balance model) were used, the model for WP 4 could not be used, as there is no evapotranspiration in summer
- Simple general balance model is in delay as the rain gauge was installed very late

Remarks

Nachtnebel: The Greek test area is an example for soil-evapotranspirating models. In the statistical approach we can make also a transfer, even if local observations differ from the neighbouring measuring stations.

Cencur-Curk: It is suggested to do a correlation between the measured and the calculated models in the past.

Vafeiadis: A correlation on the yearly scale with 60-70% can be done, but not with monthly and daily values (lack of data).

5.3.3. PP08

Presentation is given by Bianca Mitrica.

- Future water availability consequences: GEPIC and CERES Maize Wheat Model for agriculture
- Future water safety: DRASTIC index and risk pollution index
- Aims of this model: insight in role of efficient irrigation management on crop yields and crop water productivity
- Autumn wheat production increased in the last years, balancing the less growing period due to higher CO2, etc; Maize was the contrary as it doesn´t profit from CO2 concentration
- Growing season will decrease in the test areas
- DRASTIC index was related to risk pollution index and areas delineated with risk.
- Therefore safety indicators were proposed, acc. to OECD

Remarks

Nachtnebel: DRASTIC is related to physical feature on the site, not related to climate change but has impact to issues like GW or soil related issues.

Grigorescu: Correct.

Bogardi: Concerning agriculture: Was irrigation included to the results?

Mitrica: No, and it is not used very much, as irrigation systems have been destroyed.

Bogardi: Are safety indicators are calculated with regard to climate change? Which indices relate to climate change and water quality?

Mitrica: No, they are not related to climate change. DRASTIC model indices are related to climate change.

5.3.4. PP06

Presentation is given by Klara Toth.

- In HU point of view: number of unsupplied persons is relevant for household water demand
- Non household water demand: particular user is relevant (e.g. lost workplaces, lost production)
- Irrigation water demand: with regard to particular plants
- Ecosystem water demand: by a particular ecosystem, chosen for the WP
- Ranking criteria for Bükk is presented

Remarks

Kuschnig: Is with flexibility meant that these are measures which even work under uncertainty?

Bogardi: This relates to if something works if the situation changes. It is qualitative justification.

Vasiljevic: Concerning water quality, it is supposed that bacterial contaminated water will further progress, heavy metal will not drastically increase, nitrates will increase; also pesticides and pharmaceuticals should be added to the list of risk parameter. If there is less precipitation, the concentration of those pollutants will rise. It is also assumed that people use too many pesticides also in the future.

Toth: It depends obviously on the test area, too.

Bogardi: Concerning the pollutants and the decrease of the river flow, that should be considered. Concerning the pesticides, it depends on the amount e.g. nitrates. Then under the item of water quality risk you can mention those, also on regard to climate change.

Nachtnebel: This might be also the result of land use change, so you can mention two things: land use change and climate change.

5.3.5. LP

Presentation is given by Gerhard Kuschnig.

- AT uses the conceptual model for WP 6
- Additional statistical data for 2021 to 2050
- A1B scenario for 2071 to 2100
- Only households and tertiary sector considered
- Per capita demand will stagnate or decrease by 2050, despite of population and economic growth, mainly because of technical improvements of household equipment, fittings, water meters and raised awareness
- For the tertiary sector, the trends in employees have to be analyzed; numerical estimation for economic growth cannot be seriously done for such a long period
- CC driven factors for demand have not been analysed
- Possible demands could be: watering of green areas, watering and cleaning of streets (dust), showering/bathing; but only if dry periods increase and no evidence for extreme events

Remarks

Toth: HU has same questions as AT: when we are talking about the period to 2050, we created an too artificial future based on assumptions, only for the purpose for defining quantities for demand being equal or larger than the resources, as an exercise for the situation if the demand exceeds the resource limits. This has to be emphasized.

Nachtnebel: You have a lot of local influences, which are out of control. You mentioned the water price; it is very difficult to know in Vienna, because it is much hidden in the operation costs of the building.

Toth: It was also tried to put some figures, e.g. changing in heating systems etc but it is very hard to put figures, it is more assumptions.

4.3 Environmental aspects of water prices

4.3.1 Approach 1 – PP04

Presentation is given by Barbara Cencur-Curk.

- WFD: costs should be considered, including environmental and resource costs
- Cost, value and price definitions according to Water Policy 4
- Effects of price policy are presented (increased price reduces demand; increased prices increase supply; increased price facilitates reallocation between sectors; increased prices improve managerial efficiency; increased prices lead to sustainability; increased prices reduce the per unit cost of water to poor people)
- General principles for cost and value of water are presented, example is given (water protection areas: costs of protection measures, compensation for restriction in agriculture)

Remarks

Toth: This depends if there is a free competition at the source.

Cencur-Curk: So this would be environmental externalities

Kuschnig: How do you deal with issues which cannot be defined in monetary terms, e.g species extinguished?

Toth: We calculate the benefits (revenues from water price) and the e.g. a nice view and then compare.

Pachel: What is the difference between economic and environmental externalities? Externalities are costs which are not covered by the price.

Toth: Environmental externalists are not known; what you cannot express in monetary terms.

Bogardi: Costs of protection areas are economic externalities in his point of view.

Cencur-Curk: what is opportunity cost then?

Toth: Externalities are regarded in the revenue/income side. Cover the costs with the price increase; you have to look at the cost side to explain the price (increase).

Pachel: Opportunity costs are basically what you lose if you use this instead of something else.

Cencur-Curk: The paper will be send to the partners.

Zambetoglou: The question is if you are trying to reach a final price for the user, should it be to get a gain of it or just a price for the end user?

Cencur-Curk: Public water supplies are not allowed to make gains, same for AT. In reality, these full costs are not covered by the price (e.g. maintenance).

Kuschnig: It is possible to charge more than the costs only, but just if you have investment plans. The WFD asks for cost covering prices, but it is not so easy to define the costs. In Vienna, the price is also a political decision. A short description how the price mechanism works would be interesting.

Zambetoglou: It is very relative what are the opportunity costs; no decision maker would take into account this detail. That part is out of the scope of the project.

Toth: The presented cost structure is very similar to the one in the discussed in HU for the water pricing some years ago. E.g. there is an environmental fee; the water company pays for using the water.

Zambetoglou: Losses: cost of loss is about 26% at PP12, also due illegal losses. There is discussion on investments vs. losses; the investments are negative because they are higher, only tax on Water Company could lead to investments. Now there is an extra fee in the water bill to cover the energy cost of waste water residuals disposal (formerly to landfills, now forbidden).

Cencur-Curk: In SL there is the same problem, because here more water has to be pumped because of the losses. So it is no environmental problem, but also cost problem.

4.3.2 Approach 2 - LP

Presentation is given by Gerhard Kuschnig.

- Comparison: environmental services of vegetation (forests) vs. Treatment
- Services of vegetation:
  - storage
  - retention
  - filtering
- Most of the service is accomplished by compulsory good practice (forest law and water protection zone)
- Additional costs for higher standards in tourist-, pasture- and forest management due to protection functionality
  - management of deposal of wastes and fecals
  - forest management (most expensive)
  - pasture management

5 WP 6 to do´s

All partner contributions have to be sent to the WP leader Bianca Mitrica (biancadumitrescu@yahoo.com).

5.1 Jointly agreed scenarios of water uptake for different water utilizers (industry, agriculture, tourism, households

- Deadline was March, 2011
- SL has to send the contribution until July 2011
- Structure of criteria, water quality and water quantity, estimation under climate change

5.2 Joint report about future water availability for public water supply

- Deadline was June 17th, 2011
- **New deadline for missing contributions: 15.07.2011**
- Greece and Slovenia will deliver the contributions at the end of September
- Use the unit consequences (means a unit amount of shortage, monetary consequence of shortage), if it's ecological consequence, use the unit e.g. on the number of people.
- Then you calculate the product, multiply by the unit consequence (water quantity)
- Water quality risk: define consequences (e.g. contaminants leading to illness), if you don´t know it calculate the actual water quality index

5.3 Joint report about joint strategy for estimation of economic consequences of future water availability and safety changes

- Deadline was 02.05.2011
- This includes the strategy/methodology presented by Istvan Bogardi, and then it is up to the partners to use
- **This contribution is done by Istvan Bogardi, until the end of July 2011**
- Risk elements (using the software) has to be done in WP7, in WP 6 the risk is not calculated

5.4 Joint report about economic consequences of future water availability and safety for public water supply

- Initial deadline is until the end of July, 2011
- Partly, the models are not finished yet by the partners
- **New deadline: Partner contributions to WP leader until end of September, 2011**
- **Joint report finished end of October 2011**

5.5 General methodology report about determination of imbalances based on different water demands

- New deadline: 30.09.2011
- This is description by each partner which method was used, as presented on TW6.3 first day

5.6 Joint report about estimation of emerging imbalances between different demands

- LP input: There can be only the description on how allocation strategy works, decision based either on legal basis or market policy
- SAB input: Other allocation approach: e.g. costs vs. risks, as formulated by Istvan Bogardi; this will be done in WP 7
- SAB input: Additional chapter where conflicts might occur (potential water users), and the timeframe when potential conflicts may happen – this relates to the estimation of imbalances
- SAB input: Additionally , there should be a description for each test areas concerning the main problems of competition at the source (main competitors: e.g. agriculture, households, etc)
- Here you can change the allocation, what can be expected in the future
- Formulation of possible allocation strategies for test areas:
  - Present allocation scheme
  - Future allocation schemes
- **LP input: general approach (market based and legal based approach): short general description for all partners, this will be done by the LP until 31st of August 2011.**
- **New deadline: End of Sept. 2011**

5.7 Consolidated ACT 6.4 report abour relation among ecosystem services, water treatment and costs

- **New deadline: 31.10.2011**
- **Cooperation PP04 (Barbara Cencur-Curk) and LP (Martin Pachel), with comments by Klara Toth (comments), as PP04 did already something on ecosystems services vs water treatment**

- **2 case studies will be the core of this output, done by LP and PP04**

Remarks

Nachtnebek: The outputs should be revised by someone, as they seem quite heterogeneous at the moment.

Mitrica: The draft of the report will be sent for revision.

Conclusion: addressed persons for the draft report revision: LP (Gerhard Kuschnig) and Istvan Bogardi

6 Monograph – WP 6 contribution

Presentation is given by Bianca Mitrica.

- Focus on relevant theme
- Precise and concise work is desirable
- Time schedule is end of October 2011, might be difficult for WP 6
- For Act. 6.1 and 6.1 a structure is already available and are presented
- For the last 2 activities the structure will be redefined, according to the discussion

Conclusion: Synthesis of the partner inputs should be done by WP leader, will be send to the partners for revision if test area issues are correct.

7 Follow up project

Marina Mader presents the characteristics of the 4th and last call of SEE.

- Interested partners: all partners are interested, except PP12 (doesn´t know yet, company policy not known yet, and privatizing problem)
- Project proposal will be developed within July 2011, and will be sent to partners
- Follow Up should be developed on the results of CC-WaterS

Hans-Peter Nachtnebel presents some ideas on a follow up project:

- Integrated Water Resources Management on the Balkan (Acronym: PRESERVE)
- New project should deal with vulnerability of water resources on a national level, BUT WITH COMMON METHODOLOGY
- Establishment of vulnerability maps
- Water availability maps
- Development of strategies to preserve water resources for a longer period
- Open questions:
  - relation to national water management plans according to WFD
  - Other project already covering this topic
  - Is this proposal of interest?

7.1 Conclusions for follow up project

- AT: The project (partner) structure should be kept – LP = Vienna Waterworks
- HU: Suggested issues: hot spots where water availability and demand do not meet; also vulnerability with regard to quality and/or quantity.
- SL: CC-WaterS dealt more with mean values, it could be focused more on extreme events, and also floods could be addressed if they endanger the drinking water quality. Another topic would be what strategies in dry periods (e.g. surface reservoirs or other). Floods were also a topic for drinking water quality in Ljubljana.
- Tactically, climate change and drinking water issues should be kept, some other project in SEE dealing with floods already, so the competition there is quite high.
- Dealing with extreme events: conclusions on floods cannot be made because it was not dealt with enough in CC-WaterS, could be only addressed as a secondary problem
- For GR, a proposal would be to talk to regional water authorities (public sector) on the findings, with support of university, extrapolation of what was done until now.
- Only 2 years of project duration, previous results should be used
- Water vulnerability maps can be done, we have transient run of RCMs (gradual); they can be connected to regional climate change models
- A 30km grid is available, can be downscaled for smaller areas and/or hot spots
- The region of main aquifers and same climatic conditions should be covered
- Public water supply is not the issue of the integrated water management plans, this could be a project issue
- AT: potential partners could be also ÖVWD, also ministry.
- Partners: to include other countries, also IPA partners – increased IPA funds are available - to increase the chance for approval, maybe enlarge the countries and add one or two more countries.
- Laszlo Perger mentioned the blueprint of the Danube Strategy and CC-WaterS as flagship project, this might be useful also for political support
- Further issue: added value, concerning the water management plans.

7.2 To do´s

Next steps:

1. Collection of ideas, interest of partners by Marina Mader
2. Meeting for proposal
3. Proposal will be elaborated and the partners informed

Marina Mader presents departing issues and closes the TW 6.3 workshop.

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page 1 of 4

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