CIRCLE-2 SHARE Workshop

"From National Adaptation Strategies to Concrete Adaptation Actions"

– Outcomes –

On 20th and 21st of October 2011, 65 experts (15% decision makers, 12% communicators, 36% researchers, 28% coordinators and 9% others) in the field of Climate Change Adaptation (CCA) shared knowledge and experience gained "From National Adaptation Strategies to concrete Adaptation Actions" in support of climate change adaptation policy, identification of research needs and opportunities for joint efforts in Vienna.

Drawing up on the PEER study "Europe adapts to Climate Change – Comparing National Adaptation Strategies" of 2009 and the first CIRCLE workshop on "National Adaptation Strategies" in Budapest in June 2009, this CIRCLE-2 workshop fostered the transnational exchange and collaboration, especially now in the light of the implementation of existing National Adaptation Strategies.

The Environment Agency Austria (EAA), as partner of the CIRCLE-2 project, led the joint effort of this event, which was hosted at the Austrian MET service - ZAMG.

During the two-day workshop a number of adaptation efforts were presented to show that there is a broad diversity in terms of activities in place (e.g. existing strategies, strategies in preparation, activities for awareness raising). The first morning session on day 1 focused in particular on national adaptation efforts and on concrete adaptation actions.

In order to focus and guide the discussions, some questions were raised:

- **What are the goals set out by the different governments at national level?**

In general, adaptation gains importance as mitigation success might not be that visible before 2040/2050 and remains insufficient up to now. Thus, the **building up** of **adaptive capacity** hand in hand with the **reduction** of **vulnerability** and **fostering** the **opportunities** to adapt successfully are general goals. The improvement of capacities to address extreme weather events (risks) and the inclusion of climate aspects into long-term investments should also be addressed.

The NAS objectives should be recognised by a broad group of stakeholders (although it has to be recognised that this will not be a "free ticket" for implementation) and it is of utmost importance to ensure a good, safe and attractive place for people to live and work. Goals can be inter alia a safe country now and in the future (2050-2100). These goals can be reached by e.g. the installation of a fresh water supply, which can also be guaranteed in dry periods.

Climate change impacts and adaptation need to be **integrated into routine planning, implementation and follow-up**. **Mainstreaming** of adaptation **into legal/economic instruments** (key policy areas) is of utmost importance. Additionally the support of international adaptation activities and cooperation needs to be addressed in the strategy goals. NAS has to be closely linked with regional, local and sectoral strategies.

In order to validate and enhance the goals of NAS, a **regular evaluation and assessment** by an independent panel, after its adoption and implementation, **is needed**.

- **How will the strategy be implemented, related to encourage and support new and ongoing local and regional adaptation actions?**

The strategy shall indicate issues like finance, research gaps and include an action plan and time frame, but its **implementation** often **depends on the political will** (therefore: mobilise political commitment and increase public awareness). Adaptation needs a structural change in the way we think and act.

Clear leadership is needed. **One Institution/Ministry should take the overall responsibility for the development, implementation and monitoring of NAS, linking to other national players** via e.g. coordination groups or inter-ministerial working groups and guides all other players in **their** own **fields of activity. Implementation calls for more cross-sectoral cooperation. Developing and enhancing cooperation between ministries and regional and local authorities** will be **one of the key issues during the development and revision process of the NAS**. Therefore a broad and early involvement of all relevant stakeholders is a key success factor.

Ministries jointly have to take responsibilities (adaptation as a joint effort) and should provide funds for sector-integrated adaptation measures. An **effective institutionalisation** (e.g. dedicated governance structure with strong administrative bodies on the central/national and regional level) has to be achieved for most **adaptation measures to be regionally implemented**. **Continuously support mainstreaming** of climate change into legal, technical and economic frameworks and in this way, climate change adaptation will be integrated into the daily work of diverse actors.

Strategies and action plans and the **participative process** of preparing them **help raising awareness on adaptation** (raise and keep awareness for future risks posed by CC). Adaptation to climate change requires continuous efforts and shall support other strategy implementations. **Awareness raising that extends to the private sector** is also important and may lead to innovations. A flexible learning and a positive attitude for changes should be encouraged to recognize new challenges and need for action.

Adaptation actions showcase that adaptation is taking place at the regional and local level, partly independent from national efforts related to the strategy (bottom-up), partly connected to national efforts and frames (top-down), which is very dependent on the cultural backgrounds of the countries, the differences in the national planning systems as well as specific needs from the private sector (companies). These efforts highlight ongoing adaptation activities related to urban areas (e.g. Grabs[1] project, focusing on green and blue infrastructures, City of London), forest management and adaptation[2], freshwater supply as well as sea-level rise and river basin management activities. These briefly describe the diversity in different sectors, levels and areas.

Research and development (e.g. develop further observation and warning systems, address international linkages and development cooperation) need to be strengthened to be able to provide robust climate and possible/good adaptation practice information. It is of great importance to provide **information** on e.g. how to do a first risk assessment, „**good practice**“, and organize **regional adaptation events** to inform, discuss and build-up consciousness.

Some sectoral assessments and action plans have been prepared independently from NAS developments, which are mostly supported by research results or guided by ongoing research programs (providing the knowledge base like improve understanding at sectoral and local level, allow users to assess their current and future vulnerability to climatic change or provide users with frameworks for adaptation planning). Also the delivery of information on adaptation costs versus cost of inaction is important.

Much of the **practical implementation** takes place **in** the **regions and municipalities**, especially with regard to e.g. **flood risk management and spatial planning** at its different levels. Different **municipalities and regions are independently active** and some have already prepared or are preparing their **own adaptation strategies**. Financial support shall be provided for regional and local efforts. Also the spreading of knowledge about good example and the support of pioneers (funding) inspires other players.

Funding schemes can grant financial support for elaboration of a community as well as Small and Medium Enterprises (SME) based adaptation strategies, offer educational opportunities, pilot projects in municipalities and foster regional networks.

➢ What are the challenges for implementation of NAS?

One of the challenges of effective adaptation is the **coordination of various ministries and agencies**, the **collaboration across and the needed pro-active spirit between different levels of government**. Especially the involvement of all authorities, civil society organisations and business is a necessity. For certain measures, there is also a **need for more detailed regional and local information on the impacts of climate change** (keeping in mind that higher spatial/temporal resolution raises the uncertainty), means of adaptation and an **inventory of the particularly vulnerable areas**.

[1] http://www.grabs-eu.org/

[2] http://www.wabo.boku.ac.at/wald-klimawandel.html

Adaptation measures should be **based on applied research on adaptation** and **communication of the results**. **A systematic evaluation of possible and sound measures is very important**, but difficult to implement.

In the absence of a legal framework, adaptation is a voluntary task of municipalities and there are generally weak capacities. Help from outside (e.g. use internships for providing master theses, funding for pilot projects) is needed.

Of great importance is that conflicting values and interests among actors (often hidden behind uncertainty claim) are a barrier and need to be solved and openly outspoken.

Different shortcomings have been identified like national policy to mandate action (multi-scale complexity), lack of human and financial resources, low capacity-knowledge and know how, difficult institutional horizontal and vertical integration, disconnection between top and bottom, political interest, information „too scientific" –lack of spatial specific and temporally relevant data, frustration-simply being overwhelmed and not knowing where to start.

➢ What were/are the drivers for concrete adaptation actions?

Several drivers like e.g. improved planning, exchange of knowledge and experience, awareness raising or increasing damages from natural disturbances (e.g. storm damage, bark beetle outbreaks) were identified as drivers for adaptation actions. The development of action plans, joint risk and vulnerability assessment tools and improvement of community involvement on climate change adaptation are **some actions** that **have been taken jointly**.

In e.g. urban areas the drivers can be related to serious water stress, urban heat islands, humans, municipalities and properties at risk of surface water flooding, sea level rise and landslides (reactive adaptation). Other (external) drivers e.g. in Turkey can be related to development goals like ensure environmental sustainability, which are particularly threatened by climate change.

➢ In what overall picture are these adaptation actions integrated?

Adaptation actions can be e.g. integrated into **local development concepts, land use plans, building development** and **structure planning**. They can also be linked to e.g. **company strategies** focussing on hotspots and areas where impacts exceed certain thresholds.

A risk-based approach like the following can be taken, firstly assessing how vulnerable to weather related risks the area is today, secondly use climate projections to understand how climate change accentuates existing risks or creates new risks / opportunities in the future, thirdly identifying and testing risk management options. Building on that, provide a framework to identify where the decision maker is uniquely placed to act, where other partners are best placed to act and how their actions can be facilitated or enhanced and where further work is required to understand the climate and / or impacts (e.g. research).

➢ What are the challenges identified during the implementation of concrete adaptation actions?

Sometimes the expectations of stakeholders are very high and it is very important and challenging to communicate the limitations of evidence–based on scientific methods and knowledge.

The decision maker / stakeholder shall select the scenario e.g. „worst case" scenario and climate change adaptation has to be integrated into the „standard" business processes. The most important issue is that the **stakeholders know what they want** and the challenge occurs when they do not know.

Open questions remain on **how to deal with uncertainty** regarding future climate. In that respect, sophisticated and very complex methods may not be accepted. Seek 'win-win' and 'no regrets' options first or identify where incremental changes can be made as part of systematic maintenance to minimise cost or combine into a flexible 'adaptive pathway'.

There are other **short-term and competing agendas** on the diverse policy levels. **Existing conflicts and interests** like spatial planning, navigation, water supply, hydropower, environmental issues, and safety of infrastructure are a big challenge among others. **Adaptation** is a **cross-cutting issue** and it **demonstrates interdependencies with priority policy areas**.

Certain risks are unaccaptable today. Costs and benefits shall include wider benefits of multifunctional solutions and it is questionable on how we monetise the benefits. Key challenges, with regard to the regional differences, are among others e.g. **future flood risks, future sea levels, geotechnical problems, regulation strategies, pressure groups and communication**.

Other identified challenges are related to **establishing the links between NAS on the drawing board and adaptation actions at grassroots**, to ensuring and securing participatory development processes supported by scientific knowledge and political ownership, to downscaling the national targets and aims to functional landscape levels (e.g. river basin, coastal zone, agricultural basin, ecosystems) and indentifying political boundaries, as such and the lack of incentives to promote climate change research in universities and research institutions.

The **lack of reliable climate data** poses a big challenge to the planning of climate change adaptation. Sustainable development is certainly a good and maybe even sufficient strategy to deal with climate change.

The **panel discussion** kicked-off, with a presentation about **professional integration** as **missing link between science (truth) and political practice (wishful thinking)**. A link needs to be created via a professional integration, meaning a selection in two directions, namely the Science System and the Political System, which have different target groups. UBA-Germany was selected as a case study and proofed to be a "good" example of the above highlighted integration. Especially i**n the field of integration, a durable and specified institution is needed**. Figure 1: Professional Integration for successful adaptation strategies (Böcher and Krott, University Göttingen) visualizes the concept.

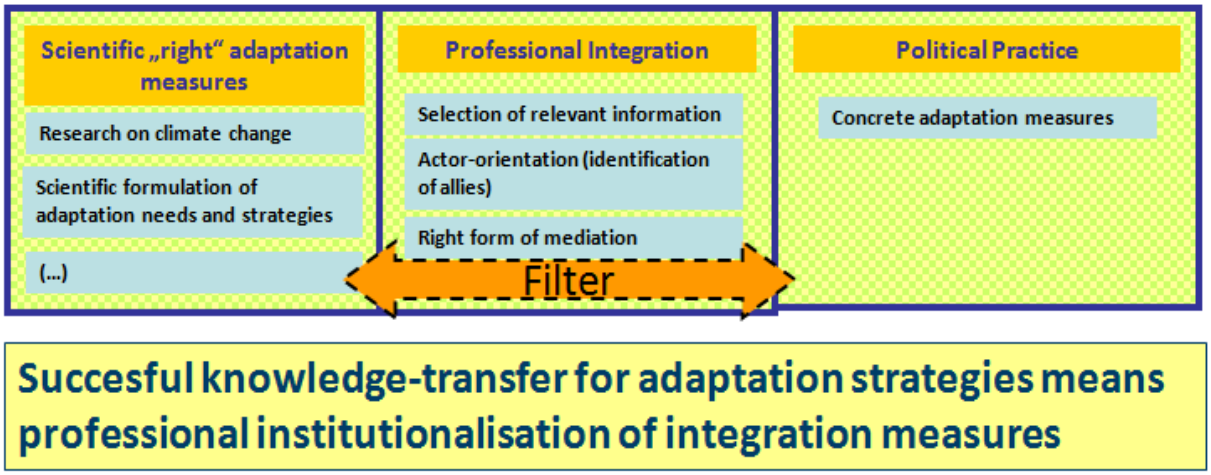

Figure 1: Professional Integration for successful adaptation strategies

During the panel discussion the **importance of stakeholder engagement** (different stakeholders and needs at different levels and times) and to provide the" **right" information for the "right" audience**

(stakeholder needs, come when they have a problem) were highlighted. The importance of creating awareness before starting actions (adaptation action – adaptation washing) was also stated.

Further knowledge gaps were raised, such as:

- Missing knowledge related to costs of impacts and adaptation - "How to get to bankable projects"?
- How to involve the private sector?

Although the economic dimension of climate change is important, instead of thinking in terms of climate costs (cost-benefit analysis – CBA), we should rather think in terms of thresholds and multi-criteria analysis (MCA).

Available numbers on cost/benefits aim at **supporting** decisions among other decisive criteria, not making them; they give a first idea of magnitude of cost/benefit ratio or can give hints for critical thresholds. So decision makers are encouraged not to wait until a fully certain decision can be made, but think about **region- and sector-specific pathways** with distinct shares of private/public adaptation as well as choosing robust adaptation alternatives first.

Four working groups had fruitful discussions, focusing on the following areas:

- ⇨ **Prioritization of impacts and adaptation actions**
- ⇨ **Governance challenges of adaptation with focus on stakeholder engagement and communication**
- ⇨ **Costs of Climate Change**
- ⇨ **Monitoring and Evaluation**

❖ Prioritization of impacts and adaptation actions

Q1: Why and how to prioritise impacts?

- Irreversible change
- Limited/no opportunities for future life – key for defining priority
- Different types of impacts – life, economic, etc.

Can there be a single set of priorities?

- National priorities and local priorities
  - Long-term and cross-cutting – national
  - Local sensitivities and vulnerabilities - local
- Political / social / scientific priorities
- Economics and state of technology and innovation can define priorities
- Priorities can change with time

Need for vulnerability and risk assessments

- including stakeholder engagement, use of indicators and consideration of an assessment of uncertainties

Questions raised

- More priority to impacts having less uncertainty
- Value (under what circumstances) of top-down prioritisation
- Value of a sector approach – can be fragmented

Q2: How to prioritise adaptation measures?

Experience / Practice

- Based on established criteria and Multi Criteria Analysis (MCA) (e.g. importance, urgency, flexibility, robustness, cost-effectiveness, sustainability, consistency with other policy goals, exceeding thresholds)
- Concentrate on those sectors where links to EU policy are possible, but consider national circumstances
- No regret, win-win or win-win-win measures
- Distinguish between capacity building (long-term adaptation) and adaptation actions (immediate measures)
- Stakeholder engagement

Concepts / Plans

- Let market do adaptation, concentrate on those areas where market fails - governments concentrate on public goods, leave private goods to the private sector [signals from government!] – nevertheless, a national frame is needed to ensure sound adaptation
- Engage stakeholders / those doing adaptation in setting priorities - ownership
- Prioritize based on scientific results, on acceptability/unacceptability of identified risks
- Restrict action to sectors, where awareness and willingness to act is largest [equity and social distribution]. Where something can be done
- Concentrate on measures that go against mainstream activities - governmental support should go where it is mostly needed, i.e. to necessary adaptation measures that are not easy to implement
- Visibility of measure as inspiration and criteria for prioritization - those measures that yield the highest visibility are prioritized (e.g. by politicians)
- Adaptation tipping points. Chose flexible solutions that allow further adjustment when more knowledge is available. Incremental measures
- Consider who is hurt and who is not hurt = equity and empowerment

Crazy / Blue Sky Ideas

- Hope for disasters
- Act where uncertainties of predictions are smallest
- Save what is most important, i.e. lives and nature
- Do adaptation in other (developing) countries
    - Instead of economic basis for setting priorities, use aesthetics as criteria for prioritization or improve quality of life
- Let the market decide

- Prioritize on geographically large scale, e.g. move agricultural production to where it is more viable
- System approach to prioritising instead of national/political boundaries
- Turn question around – what measure can be omitted
- Do not prioritise – do what can be done
- Dreams hunters – identify stakeholder's dreams, cluster it, select the ones that fit in the adaptation concept and implement it (with the acceptance and support of the stakeholders).

Q3: How to create and use synergies and positive sides of climate change?

Synergies [incl. conflicts over different timeframes]

- Mitigation, sustainability, social and economic developments, innovations, health, retrofitting, restoration, threats as opportunities

Realisable as a result of:

- Trans-disciplinary research, trans-national cooperation, cities
    - Driven by the complexity of climate change vulnerabilities/risks and the responses, but also opportunities
- Increasing social capital, participatory and co-generation approaches, Corporate Social Responsibility (CSR), economic benefits, multi-national cooperation
- Climate change can provide the trigger for action
- Municipalities, regions and private sector taking the lead

Positives [could be positive or negative – timing and circumstances]

- Agriculture, forestry, tourism, potential for new jobs and business opportunities, innovations

Synergies and positives realisable through:

Making it real (positive) and 'personal'

- Visualisations and awareness raising
- Access to and sharing learning of practices
- Stakeholder engagement – active voice and value for knowledge
- Viewing adaptation as a learning and social process
- Tapping energy / resource for action – opportunistic

❖ Governance challenges of adaptation with focus on stakeholder engagement and communication

Q1: How to initiate adaptation, ensure commitment and management? What are the most important triggers to initiate adaptation processes?

There is **no "one size fits all"-solution**. Adaptation is a social process, which needs to be tailored to the regional/ local context. (This was a general remark for all questions discussed in this working group)

Commitment is ensured **through involving stakeholders in the process**. Specifics differ, but in general, important triggers are:

- Extreme weather events
- Knowledge & interpretation of knowledge
- Funding, money
- Cooperation between people (across sectors, across government levels (national/regional/local))
- Legal imperatives, regulation
- Interested & engaged individuals, especially when legal frame is missing
- Political will (there was a discussion on the importance of the political culture (which will influence the process) for the outcome
- External influence (e.g by the European Comission)

Q2: How to build knowledge and awareness? What are the gaps & needs?

Communication on Climate Change Adaptation **has to be two-ways**: Knowledge has to be transferred between the research community, the coordinator/ governance and those who are affected / stakeholders.

In order to communicate in an efficient way, the **relevant knowledge for the targeted group** (e.g. decision-makers) **has to be identified**. People are in general interested in knowing in what way climate change will affect them/ their sector/ the group or area, which they feel that they belong to.

Knowledge should be:

- Relevant with regards to the geographical scale,
- Motivating (as opposed to making people feel helpless),
- Also include possible benefits,

- Clear on level of certainty – not be alarmist!

Q3: How to identify and cooperate with relevant stakeholders? What are good approaches to involve and engage stakeholders?

A general experience is that it is **generally the well-organized groups** that are (most easily) **engaged**, as in most participative processes. It is **difficult to engage** all relevant stakeholders, but important to make sure that **vulnerable groups** are not left out. One method could be to be selective in the engagement process, by focusing on the most vulnerable group/s.

When engaging with stakeholders, it is important to be clear on the terms of engagement, including:

- Duration and time-commitment
- Rules and structure of process
- Influence of process on formal decisions

The process should be designed to match the particular circumstances, including:

- Sectoral/ cross-sectoral issue area
- Scale and political structure
- Stage of issue cycle

It was discussed whether it is best to have a comprehensive or a sectoral approach when designing adaptation processes. It may be best to use both approaches, adapted to different stages of the adaptation process, or dependent on which issues are in focus. It is the government's responsibility to assure a comprehensive adaptation to climate change, and that no stakeholders are excluded.

❖ Costs of Climate Change

Q1: Share of Climate Change in damage costs

- Exposure of values / socio-economic developments outweighs CC signal of damages
- Is the CC signal relevant at all? Costs of current climate (variability and extreme events) damages significant
- Past investments (‚spelt milk') trigger current climate costs / mal-adapted historical planning decisions (public and private)
    - E.g. bad adapted (water-consuming) industries may outweigh climate adaptation due to current employment
    - Production of water power and health can be attributed to CC quite well (although the latter not in market values), others cannot be attributed that clearly (e.g. agriculture)

Q2: Lessons Learned from past trends

- Society changes faster than the climate (up to now)
- Longer historical trends more useful than short ones
- Historical trends cannot be projected into the future, the future looks much more chaotic
    - switch to more flexible planning is necessary

→ **Stationarity seems dead as the basis for adaptation planning**

→ E.g. annuality might serve as basis (mimimum thresholds), but 'flexible CC buffers' (additional 'CC margins') need to be considered and resilience has to be increased beyond annuality Sometimes single events trigger a lot of lasting change (e.g. Heat wave 2003 with implication to forest, biodiversity)

→ still major disasters drive societal awareness, demands policy actions and play a strong role, are sometimes necessary to change perception, e.g. 2009 Forest fires in Russia, floods in 2002)

Q3: Methods to project climate damage costs into the future

- Very tricky for extreme events
- Doable for slow onset (rather certain) changes like temperature raise, BUT do they reflect future damage/impact costs? Probably not.
- tricky also due to different types of costs:
  - Direct costs (for repairing, reconstructing)
  - Indirect costs (production, traffic interruption)
  - Costs not measurable in market values (e.g. health, loss of life, loss in ecosystem services)

Q4: Do we need policy instruments only for areas/sectors at which we detect market failures?

Instruments to promote Adaptation:

- **Adaptation Market Mechanism (AMM)**:
  - Different designs possible: (i) fixed subsidies per unit of adaptation, (ii) competitive tendering for a pre-defined subsidy volume, or (iii) adaptation quotas denominated in tradable certificates (eq. tool to emission trading scheme, but not with mitigated CO_2eq, but damage costs and ancillary benefits)
  - Market mechanisms to support adaptation actions with two major goals: (i) allocate money to adaptation projects that have the best cost-benefit ratio, (ii) launch private investors to share investments with attractive solutions
  - Major challenges: verification of (predicted) adaptation achievements, fixing the baseline, political and technical preconditions
- Other 'classical' instruments:

1. **Market Based Instruments** (MBIs): regulation through market signals and prices such as taxes, subsidies, tradable permit systems, public-private-partnerships, Payment for Ecosystem Services (PES)
2. **Risk Financing Instruments** (RFIs): e.g. insurances, weather derivates, catastrophe bonds
   - **Insurance**: double role: is an adaptation option for different sectors per se, but can also set incentives via contracts
   - However, insurance faces the problem of moral hazard (i.e. a situation of information asymmetry, where a party insured against a risk behaves differently from how it would behave if it was fully exposed to the risk)
   - Also catastrophe funds may disturb the insurance market ('I get my refunding anyway – even without insurance' – case of government failure), different national insurance legislations/rules - e.g. mandatory natural hazards insurance in some countries)
   - However, insurance should not be the first priority measure taken to adapt, but complement a sectorally aligned adaptation pathway

3. **Command-and-control measures ('regulation'):** direct administrative controls, enforced by fines (standards, prohibitions, licenses), e.g. zoning plans

Q5: Cost/benefits of adaptation

- Direct costs of discrete (technical) measures quite easy to assess, but not the indirect costs/benefits of the measures at a certain time in the future (such as economy-wide and cross-sectoral effects) or e.g. effects on ecosystems which are not market-valued
- Adaptation in fact is also a matter of money – both for private actions where the right incentives are needed and for public adaptation where limited budgetary resources must be distributed among different regions / sectors
- the timing issue is striking: **costs now** and certain**, benefits/avoided impacts** at an unknown time and uncertain level in **future**
- Should we just skip assessing adaptation benefits? But then: How to convince actors, stakeholders, financers (cf. AMM) and policy makers?

MORE RESEARCH AND COOPERATION IS NEEDED

Q6: Scenarios of adapted futures triggering adaptation costs/benefits via reduction of residual damages

Scenarios of adapted futures triggering adaptation costs/benefits via reduction of residual damages:

- According to the COM White Paper: grey/green/soft
- especially 'soft adaptation' differently to 'fill':
  - Certainly **spatial planning** plays a key role but also
  - **MBIs/RFI**
  - the share of each is probably also dependant from the share between policy-driven adaptation and private/autonomous adaptation which can be incentivized by MBIs/(some) RFI
  - -> this is more about paradigms, cultures and (national) policy

MORE STAKEHOLDER INVOLVEMENT IS NEEDED TO SET THE RULES OF THE GAME

❖ Monitoring and Evaluation

Roger Street (UKCIP) and Sanna Luhtala (Finland) presented their work with, and thoughts about evaluation and monitoring of climate change adaptation.

In groups, the following three guiding questions where discussed:

- Q1: What shall be measured? The process, the measure, the implementation?
- Q2: What are the criteria?
- Q3: What experience has been made and what are the lessons learned?

Roger acted as a combined moderator and teacher/ mind opener for the first two questions, and Sanna Luhtala led the discussions on experiences, with inspirational insights into how the Finnish evaluation was conducted.

Q1. What shall we measure (and Why?)?

Some of the ideas in the groups are presented below, without a priority in order. Answers and ideas were flanked with even more questions as the groups moved into the subject:

- We should try to **measure what we would like to achieve**, i.e. we need to think about why we are doing the adaptation measure. Key thing to remember – evaluation is linked to what you wanted to do. It is an iterative process.
- It is important with **integration in other sectors**, which then can help us looking for synergies and conflicts with the adaptation activity.
- **Challenges** with measuring might be **due to institutional settings**, and **common practice** today, which is not always facilitating measuring across several sectors. There is already a lot of knowledge on monitoring within other areas, and it might be fruitful to learn from them, compare ideas and evaluation with others – How did they do it? What were the results?
- It is important to use the available and appropriate technology.
    - It is expensive to measure and monitor. How can we "piggyback" what is already done within other sectors? What **lessons** are there **to learn from those who already work with monitoring and evaluation**? Are there any synergies? Evaluation is not something new. A lot of work in this area has for example already been done by developers and risk people. What can we learn from those groups?
- How do we know that we are measuring adaptation? If adaptation itself is a process, with outcomes/actions, such as flood protection – on what should we focus the evaluation? How is it most useful in the future adaptation process? An assessment needs to evaluate both the process and the outcomes
- When is adaptation good or well performed? Perhaps when no deaths occur, but maybe there were no floods to monitor the strength of the adaption measure against?
- What is the perception among the citizen on the adaptation measure? Will that perception also change in the future, when the composition of citizens might change?
- Important to include learning – and hence not only measure the specific output/action, but also possible side effects, both positive and negative.
- Further, it is a problem, if the parameters used are changing, because that prevents time-comparisons.

Examples of what to measure:

- Projects/ a particular activity - Important to take the full range of distribution of effects of adaptation into account
- The process
- Awareness raising
- Risk perception by people – change over time with adaptation measures+
- Damage costs
- Cost efficiency and cost effectiveness of adaptation
- The cost of the adaptation activity
- Participation of actors and stakeholder involvement. The measure itself can have a participating approach.
- Media – since it has a strong impact on attitudes, both among policy makers and the general public

Q2. What are the criteria? (for the measurements)

The criteria for what measures to take, and how, can be based on risk assessments, and the analysis of costs and benefits for a particular measure. Transparency is important – both when it comes to data and methods.

The following criteria are important:

- **Robust/trustworthy**: Have to be able to trust the results, access to the data, reliability
- The evaluation needs to be **transparent** – need to be able to prove it/repeat it
- **Simple** - simple to do, simple to communicate, cost effective
- **Competition** – might be a good motivator/driver to help monitoring
- Has to be **comparable over time**, and maybe over regions/ nationally – even internationally? Need to think about gaps in monitoring systems
- When it comes to costs and evaluation – can we use existing indicators?
- **Use available** and **appropriate technology and knowledge**

Q3: What experience has been made and what are the lessons learned?

There is limited experience in monitoring and evaluation of adaptation. However, there is a **lot of experience of monitoring and evaluation from other areas**, such as for example:

- Early warning systems (flooding, water quality, heat waves)
- Monitoring and evaluation of environmental goals
- Risk reduction plans
- Monitoring of green house gases
- Difficult to monitor one single effect, but the total result for an action was possible

Purpose of monitoring and evaluation – for who do we make the measurements and reporting:

- policy maker
- Scientists
- To improve the plan/measure progress

Reliable and consistent data

- Choice of data is important
- Share data with others

- Alignment of international/empiric/local data – need for guiding principles (EEA – ongoing work on indicators)

Responsibility

- Who will do the measurements?
- Who will pay?

In conclusion

A number of interesting ideas and suggestions came up in the working groups, related to **monitoring and evaluation**. It is an **area in need of development and sharing of experience**.

Interactive Discussion

As a conclusion of the workshop, there were some messages highlighted (supported by some group dynamics) about: the need to know more about each other, the need to listen to each other's expertise and the need of a real engagement!

An overview on the **European Adaptation Strategy** (adoption of the strategy by spring 2013) developments was given and its **four objectives** presented:

- Furthering the **understanding of adaptation**, **improving and widening** the **knowledge base** and **enhancing access to adaptation related information**;
- **Developing adaptation action** and **mainstreaming** of a**daptation into policies at EU level**;
- National implementation of climate adaptation requirements, and **support to and facilitation of exchange** between Member States, regions, cities and all other relevant stakeholders;
- **Capturing** the **potential of** the **market**, **market-based instruments** and the **private sector** in **strengthening adaptive capacity** and **climate impact preparedness and responses**.

In the end, the participants were asked, if the objectives are sound and do make sense. Additional, some feedback from the local authorities on their requests was asked for.

The EC Clearing House on Adaptation was presented in a live memo demonstration by the EEA, which is under development and will be in March 2012. Some of its tools were presented (e.g. adaptation tool) and the sub-pages (e.g. regional and national pages).

Germany presented their approach in selecting "good" practice examples on adaptation with the Tatenbank. An award for good measures examples has been initiated and within 12 months, around 100 entries have been indicated.

Following that, a CIRCLE-2 effort, the CIRCLE-2 INSPIRATION BOOK, inspiring to take action, led by the Dutch colleagues, was presented. The idea and aim is to collect and showcase "good" practical experiences related to climate change adaptation on the local and regional scale where adaptation action already happens and it will inspire future adaptation.

THANKS TO ALL PARTICIPANTS OF YOU FOR YOUR GREAT INPUT!